ORDER NO. SD82082282C2

Service Manual

DOLBY SYSTEM

FM/MW/LW Stereo Cassette Receiver

SA-C05L

[EK], [EF], [PC]

Areas

- * [EK] is available in United Kingdom.
- * [EF] is available in France.
- * [PC] is available in European Audio Club.

- **"Dolby" and the double-D symbol are trademarks of Dolby Laboratories.**
- **Noise reduction system manufactured under license from Dolby Laboratories.**

Specifications

(Specifications are subject to change without notice for further improvement.)

■ AMPLIFIER SECTION

RMS max power output	60W (30W+30W) (4Ω)
Rated minimum sine wave RMS power output	
40 Hz~15 kHz both channels driven	
with no more than 5% total harmonic distortion	2×13W (4Ω) with AC power pack 2×17W (4Ω) with DC 15V
1 kHz continuous power output both channels driven	
with no more than 5% total harmonic distortion	2×15W (4Ω) with AC power pack 2×20W (4Ω) with DC 15V
Input sensitivity and impedance	
PHONO	2.5 mV/47kΩ
AUX	150 mV/22kΩ
MIC	1.5 mV/10kΩ
Frequency response	
PHONO	RIAA standard curve ±1 dB
AUX	20 Hz~20 kHz (−3 dB)
MIC	20 Hz~20 kHz (−3 dB)
Graphic equalizer	
60 Hz, 150 Hz, 500 Hz, 1 kHz, 3 kHz, 6 kHz, 16 kHz	±10 dB
Output voltage	
REC OUT	150 mV/4.7kΩ
Load impedance	4Ω~16Ω

■ FM TUNER SECTION

Frequency range	88~108 MHz
IHF usable sensitivity	1.8 μV/75Ω
Total harmonic distortion	
MONO	0.2%
S/N	
MONO	62 dB (DIN) 75 dB (IHF)
Frequency response	20 Hz~15 kHz, +0.5 dB, −1.5 dB
Alternate channel selectivity	60 dB
Stereo separation	
1 kHz	40 dB
Antenna terminals	75 ohms (unbalanced)

■ AM TUNER SECTION

Frequency range	
MW	525~1605 kHz
LW	145~350 kHz
Sensitivity	
MW	30 μV, 300 μV/m
LW (S/N 20 dB)	45 μV
Selectivity	
MW	27 dB
LW (at 250 kHz)	30 dB

■ CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Heads	
REC/PLAY	MX head
Erasing	Double-gap ferrite head
Motors	Electronically controlled DC motor
Recording system	AC bias
Bias frequency	80 kHz
Erasing system	AC erase
Tape speed	4.8 cm/sec

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

Frequency respons (w/o Dolby N.R)	
METAL	20 Hz~17 kHz, 30 Hz~16 kHz (DIN)
CrO2	20 Hz~16 kHz, 30 Hz~16 kHz (DIN)
NORMAL	20 Hz~15 kHz, 30 Hz~15 kHz (DIN)
S/N	(signal level = max recording level, CrO2 type tape)
DOLBY NR in	65 dB (above 5 kHz)
DOLBY NR out	55 dB
Wow and flutter	0.05% (WRMS) ±0.14% (DIN)

■ GENERAL

Power consumption	105W (AC)
Power supply	AC 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (W×H×D)	271 × 232 × 206 mm (10-5/8" × 9-1/8" × 8-1/8")
Weight	4.5 kg (9.85 lb.) without AC power pack 5.8 kg (12.7 lb.) with AC power pack

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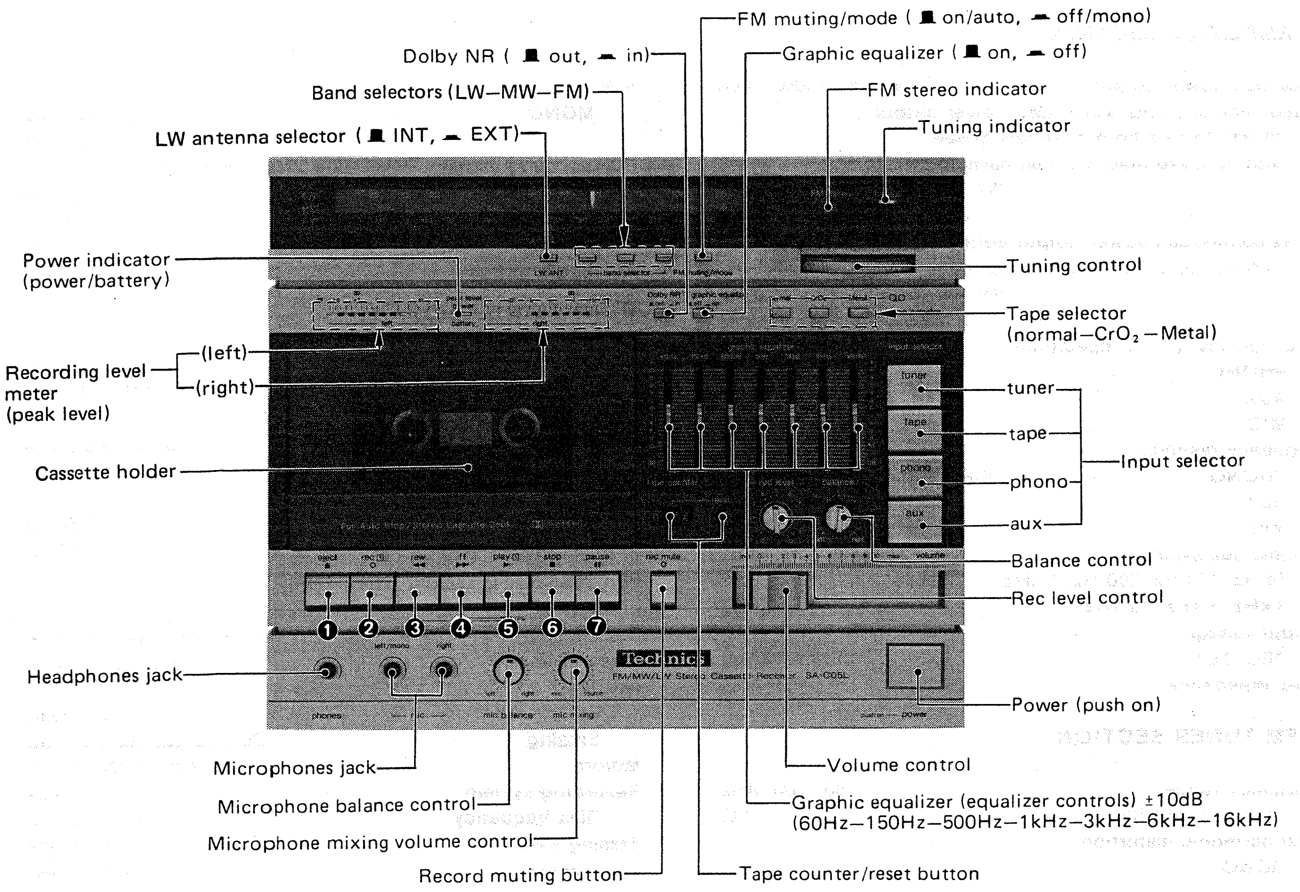
■ LOCATION OF CONTROLS


FM muting/mode (■ on/auto, ▬ off/mono)
Dolby NR (■ out, ▬ in)
Graphic equalizer (■ on, ▬ off)
Band selectors (LW–MW–FM)
FM stereo indicator
LW antenna selector (■ INT, ▬ EXT)
Tuning indicator
Power indicator (power/battery)
Tuning control
Tape selector (normal–CrO₂–Metal)
Recording level meter (peak level)
(left)
(right)
tuner
tape
Input selector
phono
aux
Cassette holder
Balance control
Rec level control
❶
❷
❸
❹
❺
❻
❼
Headphones jack
Technics
Power (push on)
Microphones jack
Volume control
Microphone balance control
Graphic equalizer (equalizer controls) ±10dB (60Hz–150Hz–500Hz–1kHz–3kHz–6kHz–16kHz)
Microphone mixing volume control
Record muting button
Tape counter/reset button

❶ Eject button
❷ Record button
❸ Rewind button
❹ Fast-forward button
❺ Playback button
❻ Stop button
❼ Pause button

RÉGLAGE DE FM

• Réglage et équipement untilisé

1. Générateur du signal FM (FM-SG)
2. Oscilloscope
3. Voltmètres électronique de courant alternatif et de courant continu (VTVM).
4. Compteur de fréquence (19kHz et 108MHz mesurable).
5. Placer le sélecteur de gammes d'ondes sur la position "FM".
6. Commutateur de silencieux/mode ..... off/FM mono.

	FM GENERATEUR		FREQUENCE D'AFFICHAGE PAR PREREGLAGE	PREPARATIONS	ELEMENTS REGLES	PROCEDURE DE REGLAGE
	BRANCHEMENT	FREQUENCE				
	RÉGLAGE DE FI-FM					
1	——	Sans signal	98MHz	Brancher le voltmétre électronique à C.C. aux bornes TP102 et TP103 (Voir la fig. 25)	T101 (Transfo FI discri.)	Régler le noyau T101 de telle sorte que le voltage mesuré dans le mode sans signal, soit de 0mV dans la gamme des 300mV.
	RÉGLAGE DE LA FREQUENCE FM					
2	Brancher un générateur de signaux FM à la borne d'antenne fouet télescopique. (Niveau de sortie du générateur 66dB)	87.35MHz (modulé à 100% par 400Hz) Entrée faible.	Cadran au minimum.	Raccorder l'oscilloscope aux bornes du "haut-parleur" de l'appareil.	L3 (bobin OSC)	1. Appliquer une entrée faible de telle sorte que le parasite soit compris dans la forme de l'onde de sortie. 2. Faire le réglage de telle sorte que la forme de l'onde de sortie soit verticalement symétrique. (Voir fig. 26) 3. Répéter les étapes (2) et (3) jusqu'à ce que la fréquence s'assorde correctement avec la terminaison de chaque cadran.
3		108.25MHz (modulé à 100% par 400Hz) Entrée faible.	Cadran au maximum.	Reccorder l'oscilloscope aux bornes du "haut-parleur" de l'appareil.	CT2 (trimmer OSC)	
	RÉGLAGE DE LA SENSIBILITE FM					
4	Brancher un générateur de signaux FM à la borne d'antenne fouet télescopique. (Niveau de sortie du générateur 66dB)	106MHz (modulé à 100% par 400Hz) Entrée faible.	106MHz	Raccorder l'oscilloscope aux bornes du "haut-parleur" de l'appareil.	C1 (trimmer DET)	1. Ajouter une entrée faible de façon à ce que le bruit soit inclut dans la forne d'onde de sortie. 2. Ajuster C1de façon à ce que la sensibilité soit au maximum.

RÉGLAGE PILOTE MULTIPLEX FM

	AVEC UN ERÉQUENCEMÉNTRE	PAR UN OUTRE SYSTÈME
5	1. Signal mono 100MHz non modulé appliqué à l'appareil. 2. Commutateur de silencieux sur "on/FM auto". 3. Branchez le fréquencemètre sur TP105 à travers une. 4. Régler VR102 sur 19kHz ± 30Hz.	1. Appliquez à l'appareil un signal stéréo provenant d'un générateur ou de la réception d'un émetteur. 2. Réglar VR102 jusqu à ce que l'indicateur de stéréophonic s'allume. Collez le curseur le VR102 comme indiqué sur la fig. 27.

RÉGLAGE DE LA PLATINE POUR CASSETTE

• Appareillage utilisé

1. Voltmètre électronique (VTVM) à C.A.
2. Oscilloscope
3. Compteur de fréquence
4. Oscillateur d'audiofréquence

• Bande d'essai

QZZCFM (Fig. 29)

• Réglages

1.	Commande du volume	0 (minimum)
2.	Commande d'équilibrage	0 (au centre)
3.	Régulateur des graves	0 (au centre)
4.	Régulateur des aiguës	0 (au centre)
5.	Régulateur mélangeur du micro .	source
6.	Sélecteur d'entrée	bande
7.	Dispositif anti-battements	A
8.	Suppression des bruits Dolby ...	ext.
9.	Sélecteur de bande	normal
10.	Commande du niveau d'enregistrement	10 (maximum)
11.	Compensateur graphique	hors circuit

<table>
<tr><th>No.</th><th>AJUSTEMENTS</th><th>RACCORDEMENT DU VOLT-ELECTRONIQUE</th><th>ELEMENTS A REGLER</th><th>PROCEDURE DE MISE AU POINT</th></tr>
<tr><td>1</td><td>Azimuth de la tête</td><td>(Canal de gauche)
• Raccorder le côté positif à TP203 et le côté négatif TP208 (masse). – Voir la Fig. 30.
(Canal de droite)
• Raccorder le côté positif à TP204 et le côté négatif à TP208. – Voir la Fig. 30.</td><td>Vis d'ajustement de l'angle de la tête d'enregistrement/lecture.
(Se référer à la Fig. 28).</td><td>1. Faire jouer une bande azimutale (QZZCFM 8kHz).
2. Régler la vis d'ajustement de l'angle de la tête d'enregistrement/lecture de telle sorte que le niveau de sortie soit au maximum.
3. Mesurer les deux canaux et ajuster les niveaux pour une puissance de sortie égale.
4. Après la mise au point, bloquer la vis d'ajustement de la tête avec de la laque.</td></tr>
<tr><td>2</td><td>Courant d'effacement</td><td>• Raccorder le côté positif à TP209 et le côté négatif à TP208 (masse). – Voir la Fig. 31.</td><td>Fil d'interconnexion</td><td>1. Régler le commutateur sélecteur de bande sur la position "metal".
2. Régler l'appareil sur le mode d'enregistrement.
3. Si la lecture du voltmètre dépasse 170mV, couper le fil d'interconnexion jaune qui est en parallèle avec R280 du circuit du sélecteur de bande.
Valeurs étalonnées
<table>
<tr><th>Position du sélecteur de bande</th><th>Tension</th></tr>
<tr><td>Metal</td><td>145 ~ 175mV</td></tr>
<tr><td>CrO₂</td><td>90 ~ 130mV</td></tr>
<tr><td>Normal</td><td>40 ~ 110mV</td></tr>
</table></td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">Polarisation d'enregistrement</td><td>• Raccorder le côté positif à TP201 et le côté négatif à TP207 (masse). – Voir la Fig. 32.</td><td>VR205
(Canal de gauche)</td><td rowspan="2">1. Régler le commutateur sélecteur de bande sur la position "normal".
2. Régler l'appareil sur le mode d'enregistrement.
3. Ajuster VR205 et VR206 pour une lecture de 4,1mV sur le voltmètre électronique.
Valeurs étalonnées
<table>
<tr><th>Position du sélecteur de bande</th><th>Tension</th></tr>
<tr><td>Métal</td><td>6,4 ~ 10,6mV</td></tr>
<tr><td>CrO₂</td><td>4,1 ~ 6,9mV</td></tr>
<tr><td>Normal</td><td>3,1 ~ 5,1mV</td></tr>
</table></td></tr>
<tr><td>• Raccorder le côté positif à TP202 et la côté négatif à TP207 (masse). – Voir la Fig. 32.</td><td>VR206
(Canal de droite)</td></tr>
<tr><td rowspan="2">4</td><td rowspan="2">Courant de polarisation d'enregistrement</td><td>• Raccorder un voltmètre électronique à C.A. au côté positif de TP203 et au côté négatif de TP208 (masse).
• Raccorder l'oscillateur à la borne d'entrée auxil. de l'appareil.
• Appliquer un signal de 400Hz, et ajuster la sortie de l'oscillateur d'audiofréquence de telle sorte que le voltmètre électronique à C.A. indique 580mV.
• Ensuite, raccorder le voltmètre électronique à C.A. entre TP201 et TP207. – Voir la Fig. 34.</td><td>VR203
(Canal de gauche)</td><td>1. Régler le commutateur sélecteur de bande sur la position "normal".
2. Régler l'appareil sur le mode d'enregistrement.
3. Adjuster VR203, de telle sorte que le voltmètre électronique à C.A. raccordé entre TP201 et TP207 indique 600μV.
(Avant la mise au point, arrêter l'oscillation en court-circuitant entre TP210 et le point Ⓐ de R702.
Valeurs étalonnées
<table>
<tr><th>Position du sélectur de bande</th><th>Tension</th></tr>
<tr><td>Metal</td><td>690 ~ 1090μV</td></tr>
<tr><td>CrO₂</td><td>585 ~ 925μV</td></tr>
<tr><td>Normal</td><td>560 ~ 650μV</td></tr>
</table></td></tr>
<tr><td>• Raccorder un voltmètre électronique à C.A. au côté positif de TP204 et au côté négatif de TP208 (masse).
• Raccorder l'oscillateur à la borne d'entrée auxil. de l'appareil.
• Appliquer un signal de 400Hz, at ajuster la sortie de l'oscillateur d'audiofréquence de telle sorte que le voltmètre électronique à C.A. indique 580mV.
• Ensuite, raccorder la voltmètre électronique à C.A. entre TP202 et TP207. – Voir la Fig. 33.</td><td>VR204
(Canal de droite)</td><td>1. Régler le commutateur sélecteur de bande sur la position "normal".
2. Régler l'appareil sur le mode d'enregistrement.
3. Ajuster VR204, de telle sorte que le voltmètre électronique à C.A. raccordé entre TP202 et TP207 indique 600μV.
(Avant la mise au point, arrêter l'oscillation en court-circuitant entre TP210 et le point Ⓐ de R702.
Valeurs étalonnées
<table>
<tr><th>Position du sélecteur de bande</th><th>Tension</th></tr>
<tr><td>Métal</td><td>690 ~ 1090μV</td></tr>
<tr><td>CrO₂</td><td>585 ~ 925μV</td></tr>
<tr><td>Normal</td><td>560 ~ 650μV</td></tr>
</table></td></tr>
<tr><td rowspan="2">5</td><td rowspan="2">Bobine éliminatrice de polarisation d'enregistrement</td><td>• Raccorder le côté positif à TP205 et le côté négatif au châssis (masse).</td><td>L205
(Canal de gauche)</td><td rowspan="2">1. Régler le commutateur sélecteur de bande sur la position "normal".
2. Régler l'appareil sur le mode d'enregistrement.
3. Ajuster pour une indication de tension minimale du voltmètre électronique à C.A.
Valeur étalonnée
Moins que 150mV.</td></tr>
<tr><td>• Raccorder le côté positif à TP206 et le côté négatif au châssis (masse).</td><td>L206
(Canal de droite)</td></tr>
<tr><td rowspan="2">6</td><td rowspan="2">Gain de lecture</td><td>• Raccorder le côté positif à TP203 et le côté négatif à TP208 (masse).</td><td>VR201
(Canal de gauche)</td><td rowspan="2">1. Régler le commutateur sélecteur de bande sur la position "normal".
2. Faire jouer la bande d'essai de caractéristique de fréquence de 315Hz (0dB). Puis, ajuster VR201 et VR202 de telle sorte que la puissance de sortie soit de 411mV.
Valeur étalonnée
388 ~ 435mV.</td></tr>
<tr><td>• Raccorder le côté positif à TP204 et le côté négatif à TP208 (masse).</td><td>VR202
(Canal de droite)</td></tr>
</table>

Printed in Japan
82082100 ® YK

ORDER NO. SD82082282C2–A

FM/MW/LW
Stereo Cassette Receiver

SA-C05L

- This booklet contains the specifications and adjusting procedures for SA-C05L, written in French.
- File this manual together with the SA-C05L service manual (Order No. SD82082282C2).

FRANÇAIS

CATACTERISTIQUES (DIN 45 500)

(Sujet à changement sans préaris.)

SECTION AMPLIFICATEUR

Puissance de sortie RMS max.	60W (30W+30W) (4Ω)
Puissance RMS nominale minimale d'onde sonusoïdale 40 Hz à 15 kHz les deux canaux utilisés avec une distortion harmonique totale de moins de 5%	2×13W (4Ω) en alimentation CA 2×17W (4Ω) sur piles 15V
Puissance de sortie continue de 1 kHz, les deux canaux utilisés avec une distortion harmonique totale de moins de 5%	2×15W (4Ω) en alimentation CA 2×20W (4Ω) sur piles 15V
Sensibilité et impédance d'entrée	
PHONO	2,5 mV/47kΩ
AUX	150 mV/22kΩ
MICRO (MIC)	1,5 mV/10kΩ
Réponse de fréquence	
PHONO	Courbe nominale RIAA ±1 dB
AUX	20 Hz~20 kHz (−3 dB)
MICRO (MIC)	20 Hz~20 kHz (−3 dB)
Compensateur de fréquences	
60 Hz, 150 Hz, 500 Hz, 1 kHz, 3 kHz, 6 kHz, 16 kHz	±10 dB
Tension de sortie	
SORTIE ENREGISTREMENT (REC OUT)	150 mV/4,7kΩ
Impédance de charge	4Ω~16Ω

SECTION SYNTONISATEUR FM

Gamme de fréquence	88,0~108 MHz
Sensibilité utilisable IHF	1,8 μV/75Ω
Distorsion harmonique totale	
MONO	0,2%
Signal/Bruit	
MONO	62 dB (DIN) 75 dB (IHF)
Réponse de fréquence	20 Hz~15 kHz, +0,5 dB~ −1,5 dB
Sélectivité alternée par canal	60 dB
Séparation stéréophonique	
1 kHz	40 dB
Bornes d'antenne	75Ω (asymétrique)

SECTION SYNTONISATEUR AM

Gamme de fréquence	
PO (MW)	525~1605 kHz
GO (LW)	145~350 kHz
Sensibilité	
PO (MW)	30 μV, 300 μV/m
GO (LW) S/B 20 dB	45 μV
Sélectivité	
PO (MW)	27 dB
GO (LW) à 250 kHz	30 dB

PLATINE CASSETTE

Platine	Platine à cassettes stéréo
Pistes	2 voies, 4 pistes
Têtes	
Enregistrement/Lecture	Tête MX (Solid Permalloy)
Effacement	Tête ferrite 2 entrefers
Moteurs	Moteur CC à asservissement électronique
Système d'enregistrement	Polarisation CA
Fréquence de Bias	80 kHz
Effacement	Effacement CA
Vitesse de bande	4,8 cm/sec.
Réponse de fréquences	
Metal	20 Hz~17 kHz 30 Hz~16 kHz (DIN)
CrO_2	20 Hz~16 kHz 30 Hz~16 kHz (DIN)
Normal	20 Hz~15 kHz 30 Hz~15 kHz (DIN)
RAPPORT S/B	(Rapport S/B à niveau d'enregistrement maximum, sur bande CrO_2)
Avec DOLBY NR	65 dB (plus de 5 kHz)
Sans DOLBY NR	55 dB
Pleurage et scintillement	0,05% (WRMS) ±0,14% (DIN)

DIVERS

Consommation	105W (CA)
Alimentation	CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (L×H×Pr)	271 × 232 × 206 mm
Poids	4,5 kg sans boîtier CA 5,8 kg avec boîtier CA

Nota:
La Société NATIONAL-PANASONIC-FRANCE, importateur du matériel MATSUSHITA-ELECTRIC déclare que cet appareil est conforme aux prescriptions de la directive 76/889/C.E.E. (arrêté 14 Janvier 1980).

■ MESURAGES ET RÉGLAGES

- Lorsqu'on raccorde l'appareil contrôleur, tel qu'un oscilloscope sur un voltmètre électronique, à la borne de raccord du haut-parleur, s'assurer de connecter le canal de gauche (L) aux bornes (+) et (−) du canel de gauche, et le canal de droite (R) aux bornes (+) et (−) du canal de droite.

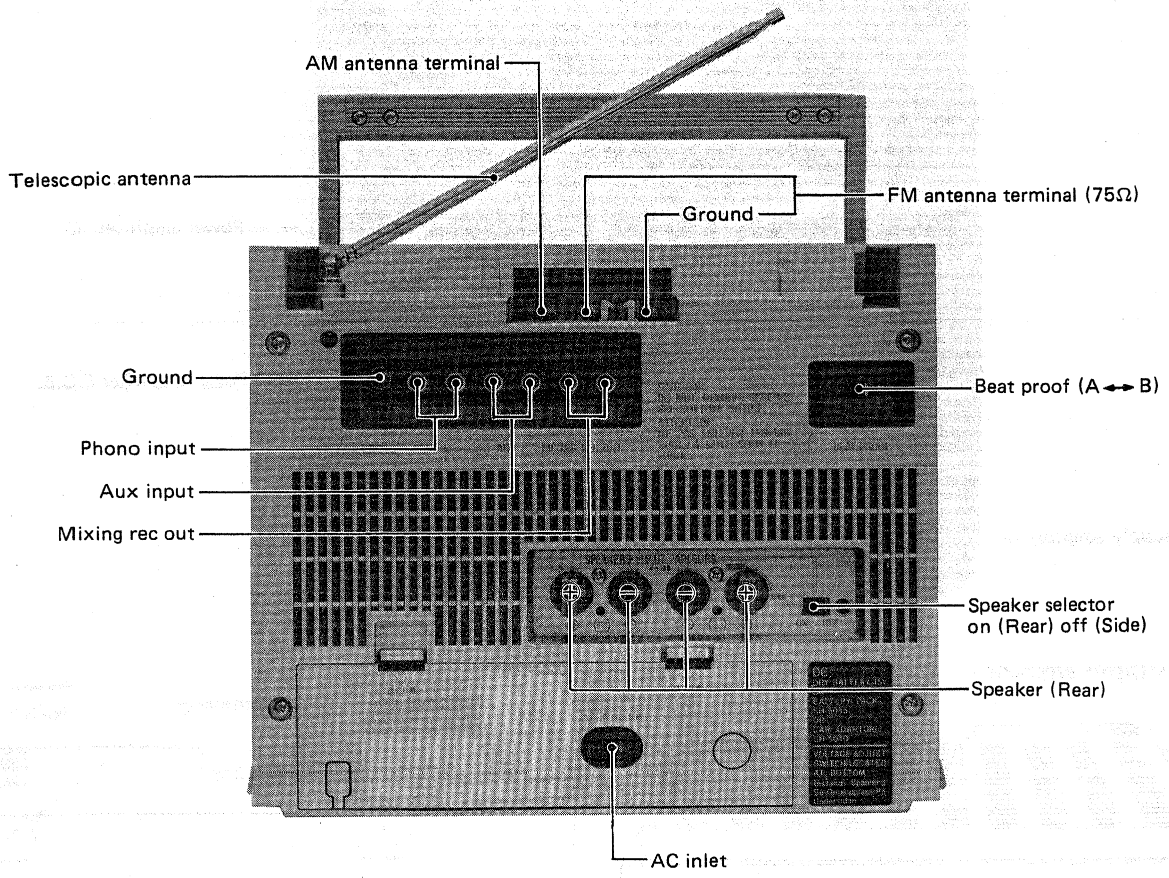
- Le transformateur de fréquences intermédiaires de la modulation d'amplitude (T102) et la bobine détectrice de modulation de fréquence (L2) ont déjà été mis au point et ne nécessitent pas de réglage.
- Avant de commencer l'ajustement de la modulation de fréquence, retirer complètement le trimmer de l'oscillateur de modulation de fréquence (C2). (Se référer au diagrame pour la mise au point.)

REGLAGE DE MW/LW

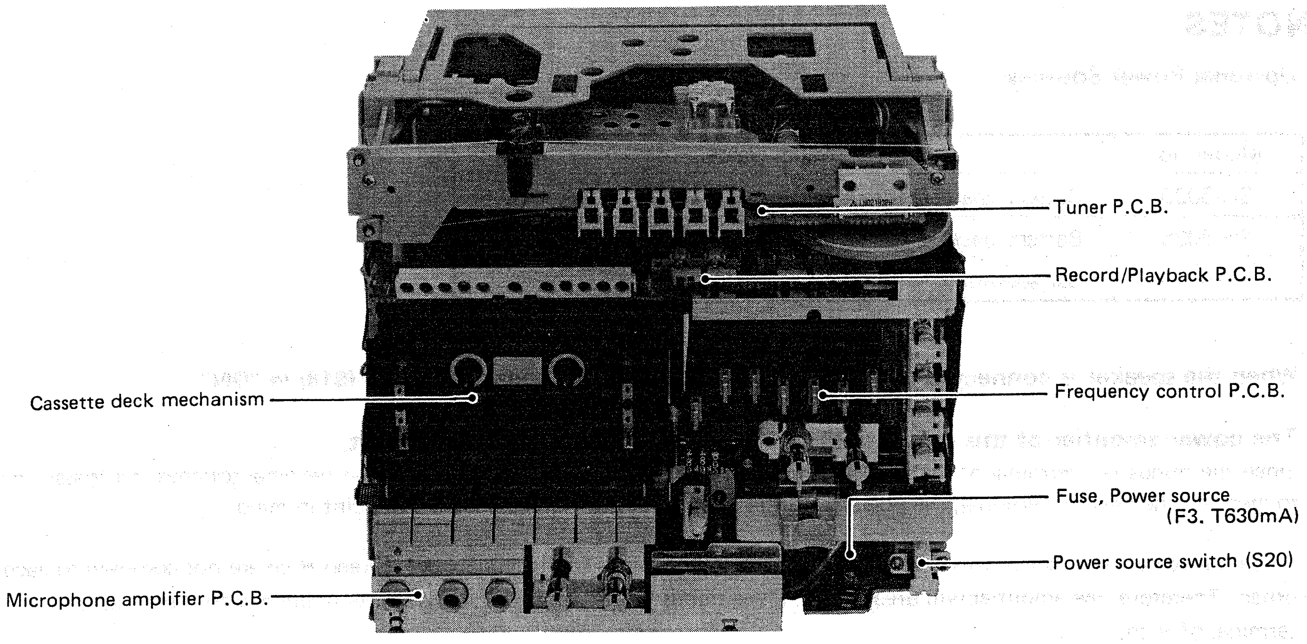
- **Réglage et équement utilisé**

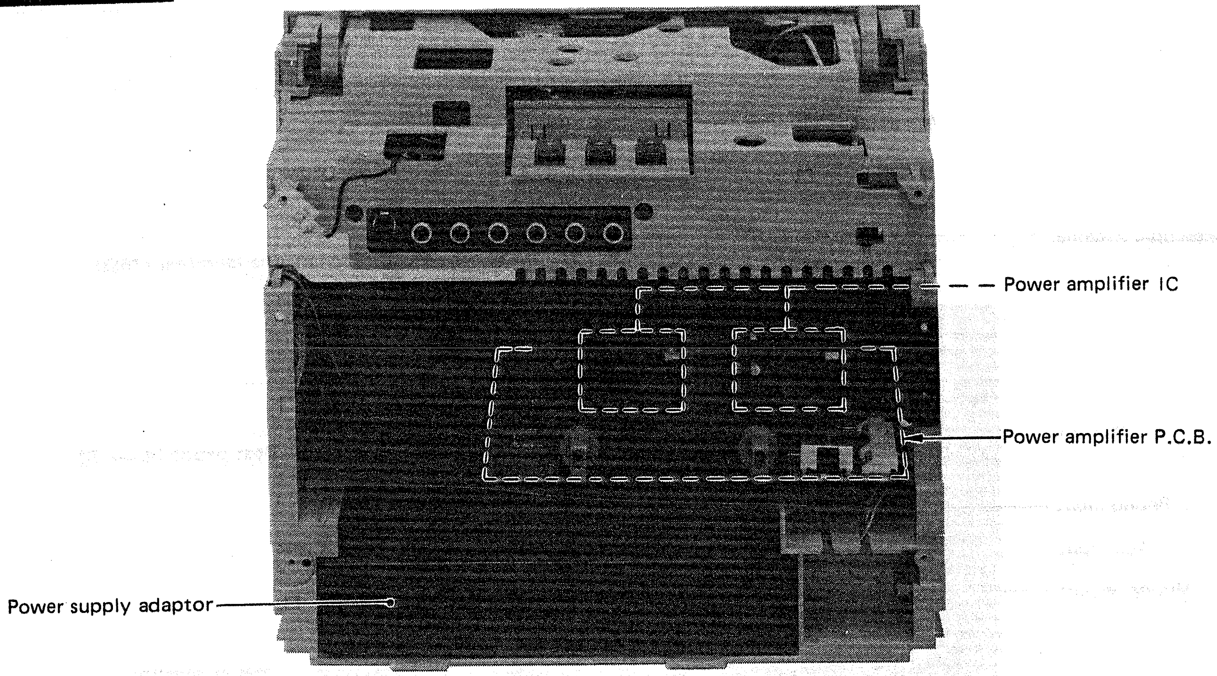
1. Voltmètres électronique de courant alternatif et de courant continu (VTVM).
2. Générateur du signal AM (AM-SG)
3. Conservel la tension du secteur à la tension nominale.
4. Le signal du générateur ne doit pas être plus élevé qu'il n'est nécessaire à obtenir une lecture en sortie.
5. Commutateur de haut-parleur . . . . . on
6. Utiliser un tournevis non-métallique pour la réglage.
7. Sélecteur d'entrée sur la position "tuner"
8. Sélecteur de gamme . . . . { MW (Alignement MW)
   LW (Alignement LW)

	AM GENERATEUR		AIGUILLE SUR LE CADRAN	PREPARATIONS	ELEMENTS REGLES	PROCEDURE DE REGLAGE
	BRENCHEMENT	FREQUENCE				
	REGLAGE DE RF-MW (PO)					
1	Brancher le AM-SG à la borne de l'antenna AM par un condensateur de 200pF. Connun au châssis. (Entrée faible)	600kHz (modulé à 30% par 400Hz)	600kHz	Brancher le voltmètre à courant alternatif et loscilloscope aux borne de sortie (speaker) de l'appareil.	L101 (bobine OSC MW) L102-1 (bobine ANT MW)	1. Régler au maximum de signal de sortie. 2. Régler L102-1 (bobine MW) en déplacant la bobine le long du noyau de ferrite.
2		1,500kHz (modulé à 30% par 400Hz)	1,500kHz		C4 (trimmer OSC MW) C3 (trimmer ANT MW)	1. Régler au maximum de signal de sortie. 2. Recommencez les étapes (1) et (2).
	REGLAGE DE RF-LW (GO) INT					
3	Brancher le AM-SG à borne de l'antenne AM par un condensateur de 200pF. Commun au châssis. (Eintrée faible)	145kHz (modulé à 30% par 400Hz)	145kHz	Brancher le voltmètre à courant alternatif et l'oscilloscope aux borne de sortie (speaker) de l'appareil.	L103 (bobine OSC LW) L102-2 (bobine ANT LW INT)	1. Régler au maximum de signal de sortie. 2. Régler L250 (bobine LW) en déplacant la bobine le long du noyau de ferrite.
4		350kHz (modulé à 30% par 400Hz)	350kHz		CT103 (trimmer OSC LW) CT106 (trimmer ANT LW INT)	1. Régler au maximum de signal de sortie. 2. Recommencez les étapes (3) et (4).
	ALIGNEMENT RF-LW (GO) EXT					
5	Brancher le AM-SG à la borne de l'antenne AM par un condensateur de 200pF. Commun au châssis. (Entrée faible)	145kHz (modulé à 30% par 400Hz)	145kHz	Brancher le voltmètre à courant alternatif et l'oscilloscope aux borne de sortie (speaker) de l'appareil.	L105 (bobine ANT LW EXT)	• Réglez au maximum de signal de sortie.
6		350kHz (modulé à 30% par 400Hz)	350kHz		CT105 (trimmer ANT LW EXT)	1. Régles au maximum de signal de sortie. 2. Recommencez les élapes (5) et (6).

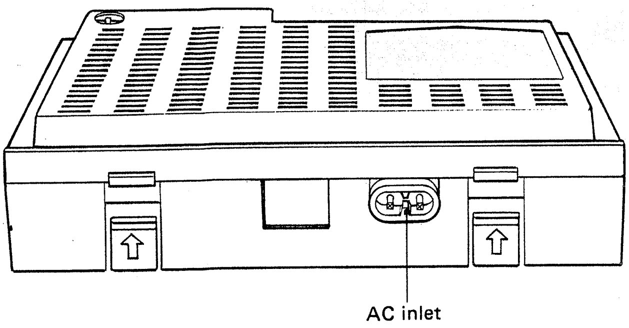

AM antenna terminal
Telescopic antenna
FM antenna terminal (75Ω)
Ground
Ground
Beat proof (A ↔ B)
Phono input
Aux input
Mixing rec out
Speaker selector
on (Rear) off (Side)
Speaker (Rear)
AC inlet

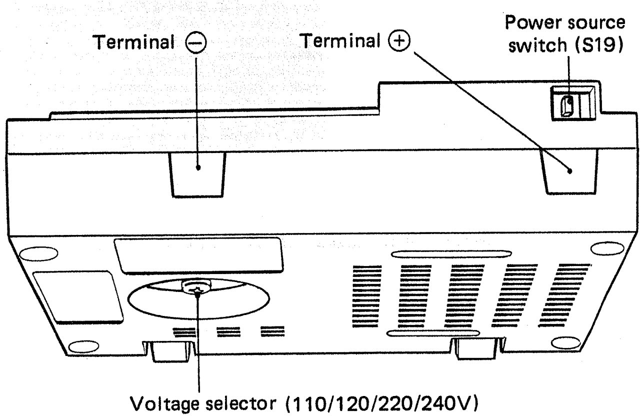
* Phono input capacitance is about 150pF.


Tuner P.C.B.
Record/Playback P.C.B.
Cassette deck mechanism
Frequency control P.C.B.
Fuse, Power source
(F3. T630mA)
Power source switch (S20)
Microphone amplifier P.C.B.


Power amplifier IC
Power amplifier P.C.B.
Power supply adaptor

- **Power supply adaptor**




Terminal ⊖
Terminal ⊕
Power source switch (S19)
Voltage selector (110/120/220/240V)

■ NOTES

1. Optional Power Sources

Model No.	Product Name
SH-5020	Battery charger (for battery pack)
SH-5035	Battery pack
SH-5040	Car adaptor

2. **When the speaker is connected with the speaker cord, set the speaker selector (S18) to "ON".**

3. **The power amplifier of this unit is a BTL (Balanced Transformer Less) circuit.**
Since the minus (–) terminal of the speaker is not common to the chassis, if the minus (–) terminal touches the chassis, not to mention the plus (+) terminal, the power amplifier will break down. Please keep this point in mind.

4. Since the power amplifier of this unit is a B.T.L. circuit, the minus (–) terminals of L ch and R ch are not common to each other. Therefore, the amplifier will break down if the minus (–) terminal of L ch is short-circuited with the minus (–) terminal of R ch.

5. When connecting the tester such as oscilloscope on VTVM to the speaker terminal, be sure to connect the L ch to the (+) and (–) terminals, of L ch, and the R ch to the (+) and (–) terminals of R ch.

■ DISASSEMBLY INSTRUCTIONS

(Note) Lead connectors and clampers removed for repair of printed circuit boards should be placed in the original positions after completion of repair.

1. How to remove the front panel and cabinet (rear panel)

① To remove the front panel, remove the setscrews ❶ ~ ❹ (Fig. 2); remove the transparent plate of cassette holder as in Fig. 1 and then pull the panel toward you.

② To remove the cabinet, remove the setscrews ❺ ~ ❿, raise the handle as in Fig. 3 and then pull the cabinet backward.

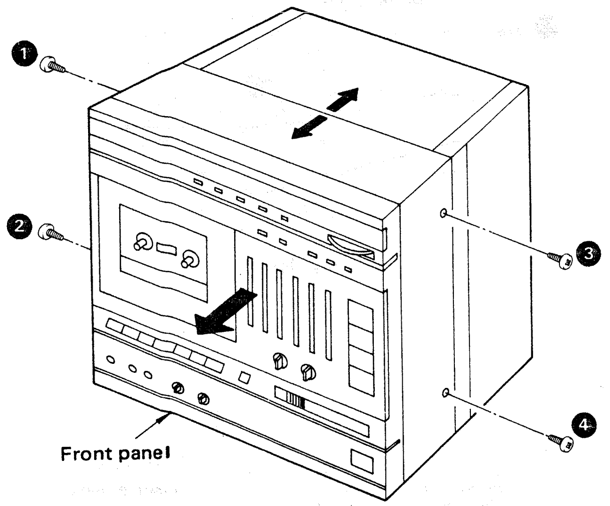

❶
❷
❸
❹
Front panel

Fig. 2

2. How to remove the Mic. amplifier P.C.B.

① Remove the front panel.

② Pull out the P.C.B. as in Fig. 4.

3. How to remove the Tuner P.C.B. and the tuning flywheel

① Remove the front panel and cabinet (rear panel).

② Remove the setscrews ⓫ and ⓬ (Fig. 5). (Earth terminal is also fastened by setscrew ⓬.)

③ Remove the 5 pin socket. (Fig. 6)

④ Remove the terminal of telescopic antenna. (Fig. 16)

⑤ Pull out the tuner P.C.B. as in Fig. 6.

⑥ Remove the nut Ⓐ of tuning flywheel and pull out the tuning flywheel as in Fig. 7.

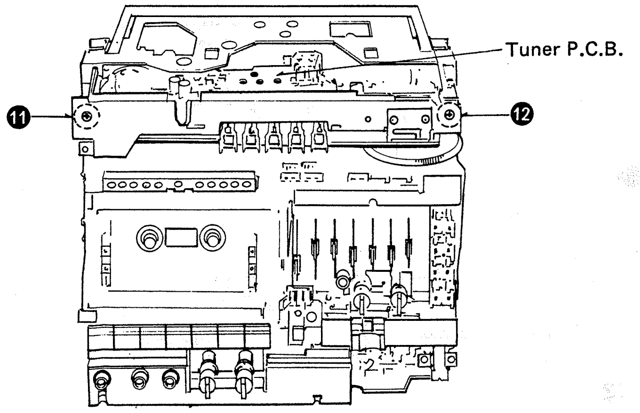

Tuner P.C.B.
⓫
⓬

Fig. 5

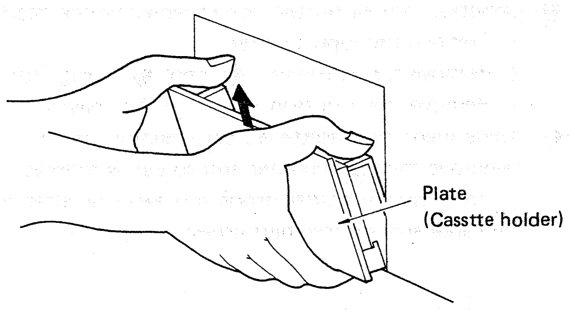
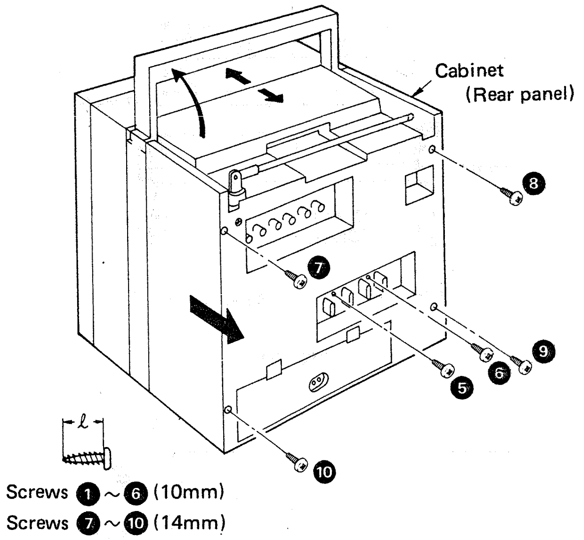


Plate
(Casstte holder)

Fig. 1


Cabinet
(Rear panel)
❽
❼
❾
❺
❻
❿
ℓ

Screws ❶~❻ (10mm)
Screws ❼~❿ (14mm)

Fig. 3

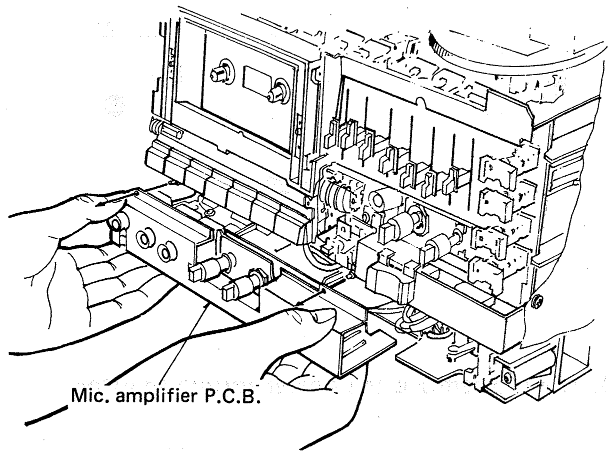

Mic. amplifier P.C.B.

Fig. 4

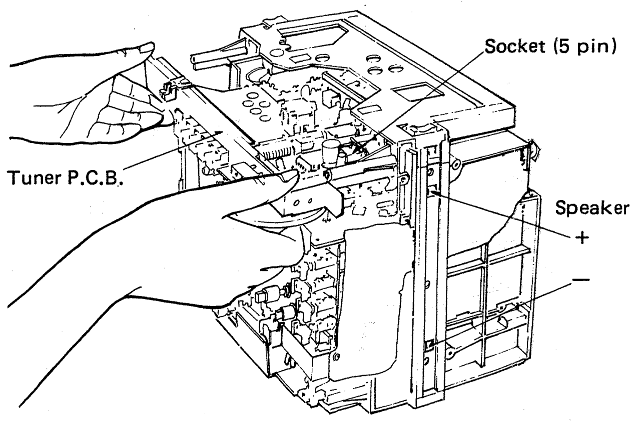

Socket (5 pin)
Tuner P.C.B.
Speaker
+
−

Fig. 6

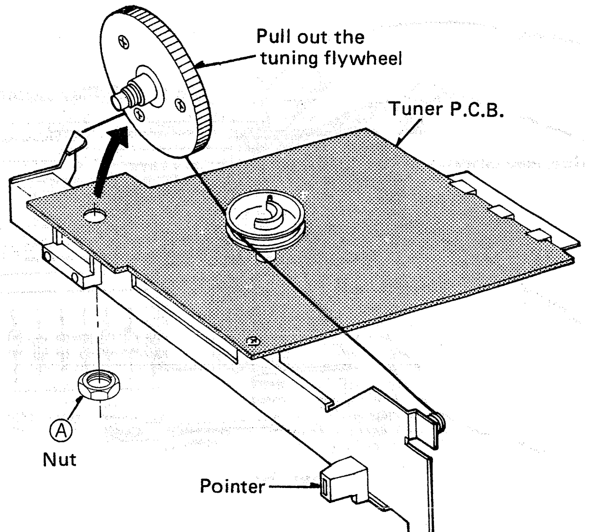

Pull out the tuning flywheel
Tuner P.C.B.
Ⓐ
Nut
Pointer

Fig. 7

4. How to remove the cassette mechanism assembly

① Remove the front panel.

② Remove the 4 setscrews ⓭ ~ ⓰ (Fig. 8). (Earth terminals are also fastened by setscrew ⓭.)

③ Pull out the mechanism ass'y as in Fig. 9.

5. How to remove the record/playback amplifier P.C.B.

① Remove the front panel and cabinet.

② Remove the tuner P.C.B.

③ Remove the setscrews ⓱ and ⓲. Remove the guide of volume knob. (Fig. 10)

④ Remove the setscrews ⓳ and ⓴ of frequency control P.C.B. (Fig. 11)

⑤ Remove the right and left claws which fasten the frequency control P.C.B. (Fig. 12)

⑥ Remove the setscrews ㉑ and ㉒ of input terminal. (Fig. 16)

⑦ Slightly pull out the record/playback P.C.B. (Fig. 13)

⑧ Remove the setscrew ㉓ and detach the record/playback selector switch connecting lever. (Fig. 14)

⑨ Cut off the lead clamper. (Fig. 14)

⑩ Pull out the record/playback P.C.B. (Fig. 13)

*To install the connecting lever, insert the lever into the hole of the rod as in Fig. 15 and secure it with screw ㉓

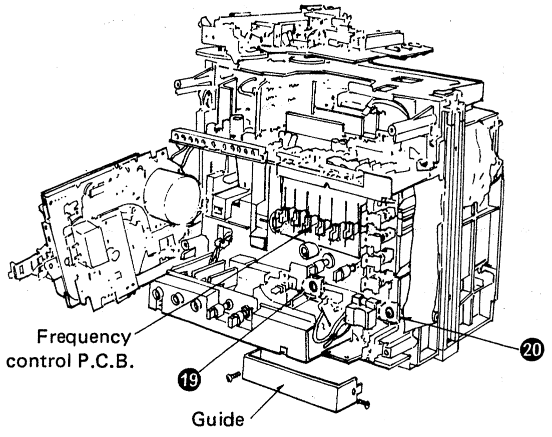

Frequency control P.C.B.
⓳
⓴
Guide

Fig. 11

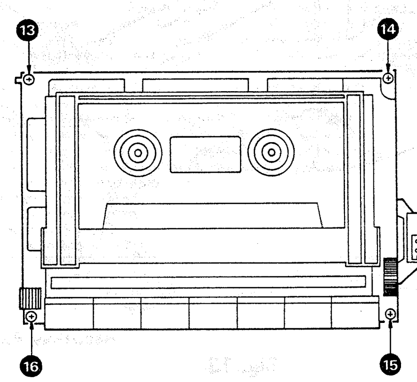


Fig. 8

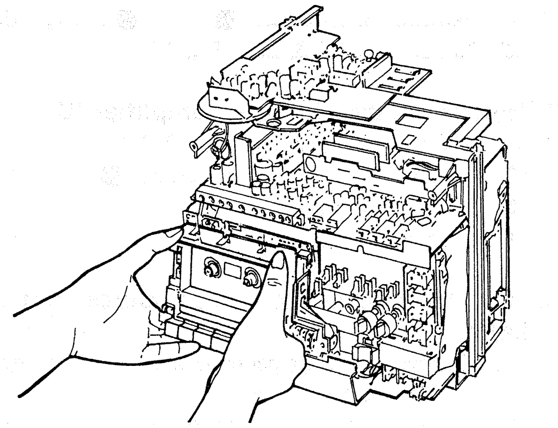


Fig. 9

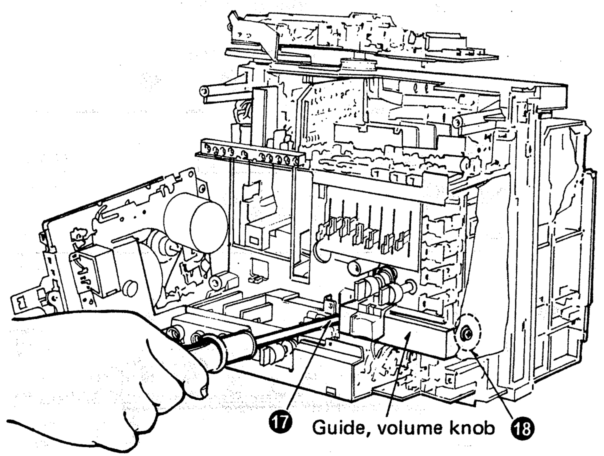

⓱
Guide, volume knob
⓲

Fig. 10

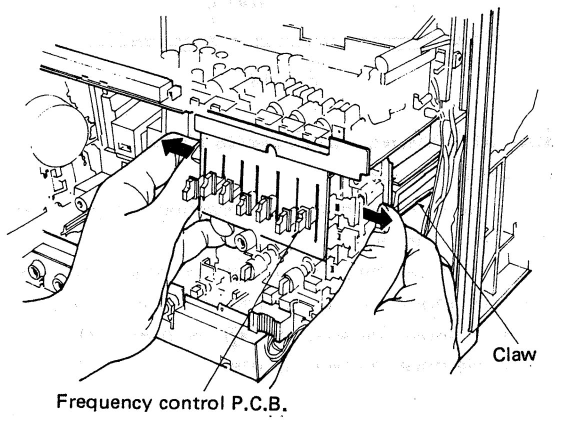

Claw
Frequency control P.C.B.

Fig. 12

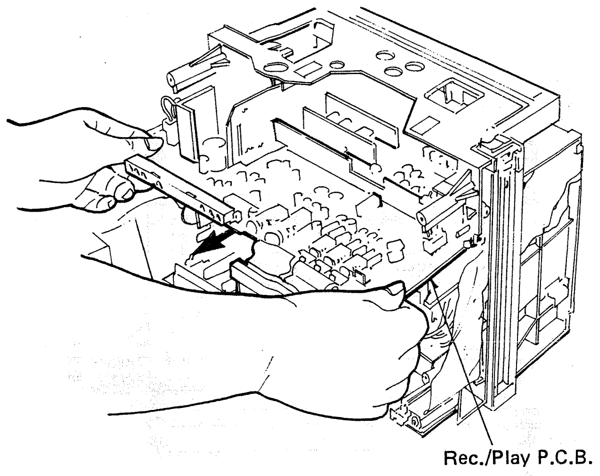

Rec./Play P.C.B.

Fig. 13

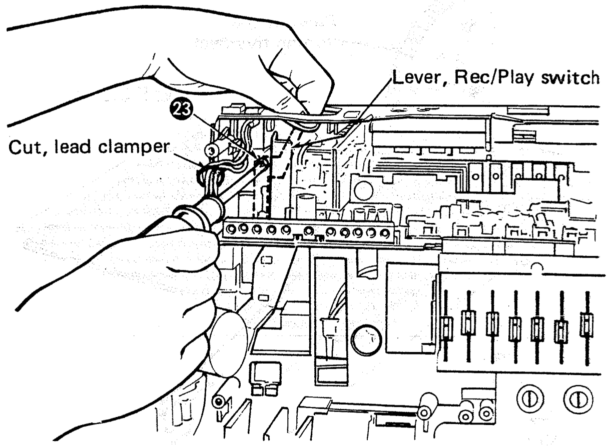

Lever, Rec/Play switch
㉓
Cut, lead clamper

Fig. 14

6. How to remove the Power amplifier P.C.B.

① Remove the setscrews ㉔ and ㉕. (Fig. 16)
② Pull out the P.C.B. as in Fig. 17.

7. How to remove the Power amplifier IC

① Remove the power amplifier P.C.B.
② Remove the IC retainer setscrews ㉖. (Fig. 16)
③ Remove the retainer.
④ Unsolder the IC.

8. How to remove the power source fuse and knobs

① Remove the front panel as shown before replacing the fuse and knobs.
② To replace the volume knob, remove the guide of volume knob beforehand as in Fig. 10.

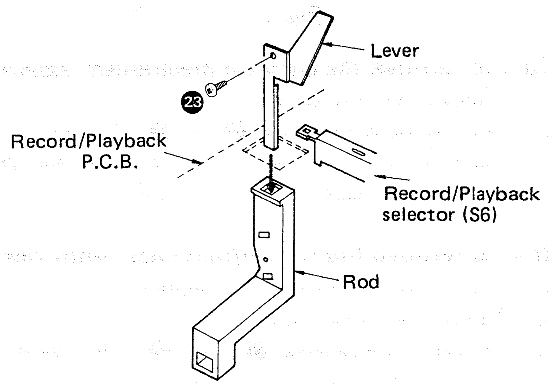

Lever
㉓
Record/Playback P.C.B.
Record/Playback selector (S6)
Rod

Fig. 15

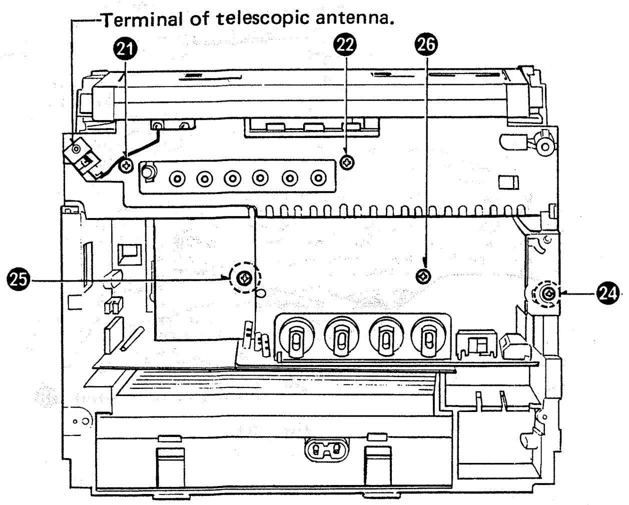

Terminal of telescopic antenna.
㉑
㉒
㉖
㉕
㉔

Fig. 16

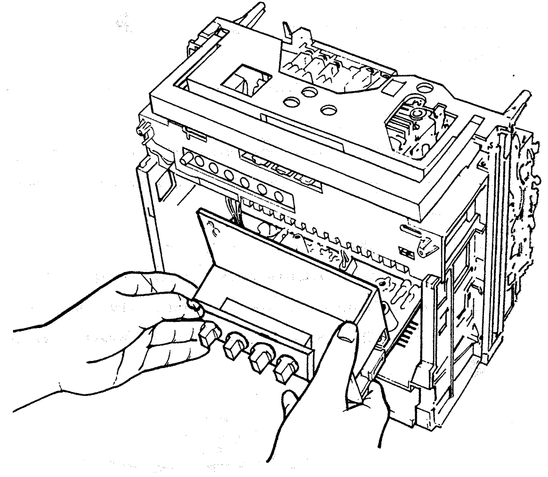


Fig. 17

9. How to Remove the Cassette Parts

① Cassette Holder
1. Remove the holder by inserting a screwdriver between the cassette chassis and holder as in Fig. 18.

② Tape Counter
1. Remove the setscrew ㉗ to detach the reflector plate as in Fig. 19.
2. Remove the tape counter belt. (Fig. 20)
3. Remove the setscrew ㉘ as in Fig. 20.
4. Remove the tape counter.

③ Cassette Control Button (when replacing the head)
1. Remove the tape counter.
2. Remove the setscrews ㉙ and ㉚. (Fig. 20)
3. Remove the 7-button unit from the chassis.

④ Adjustment of Cassette Holder Opening Speed
*Remove the tape counter and adjust as follows:
If the cassette holder drops too early or after replacing the cassette holder gear, apply grease (GR501MR) to the area around the shaft groove. (Fig. 21)

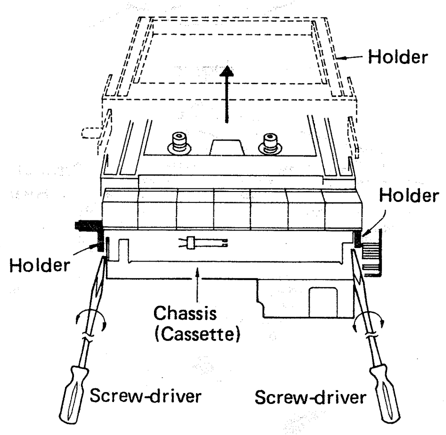

Holder
Holder
Holder
Chassis (Cassette)
Screw-driver
Screw-driver

Fig. 18

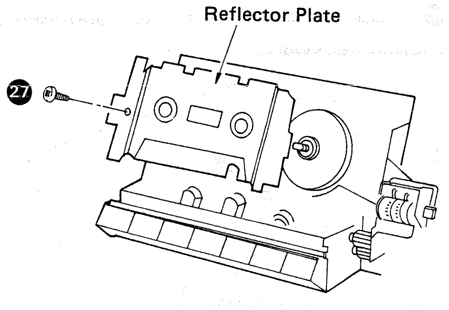

Reflector Plate
㉗

Fig. 19

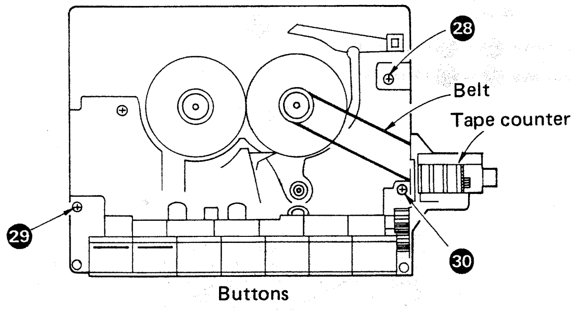

㉘
Belt
Tape counter
㉙
㉚
Buttons

Fig. 20

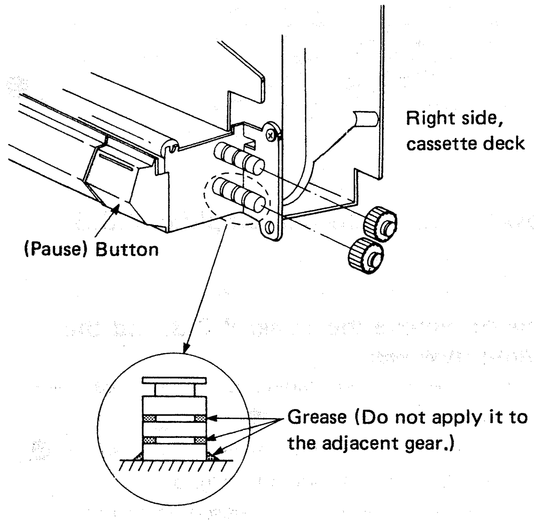

Right side, cassette deck
(Pause) Button
Grease (Do not apply it to the adjacent gear.)

Fig. 21

10. How to remove the power source adaptor

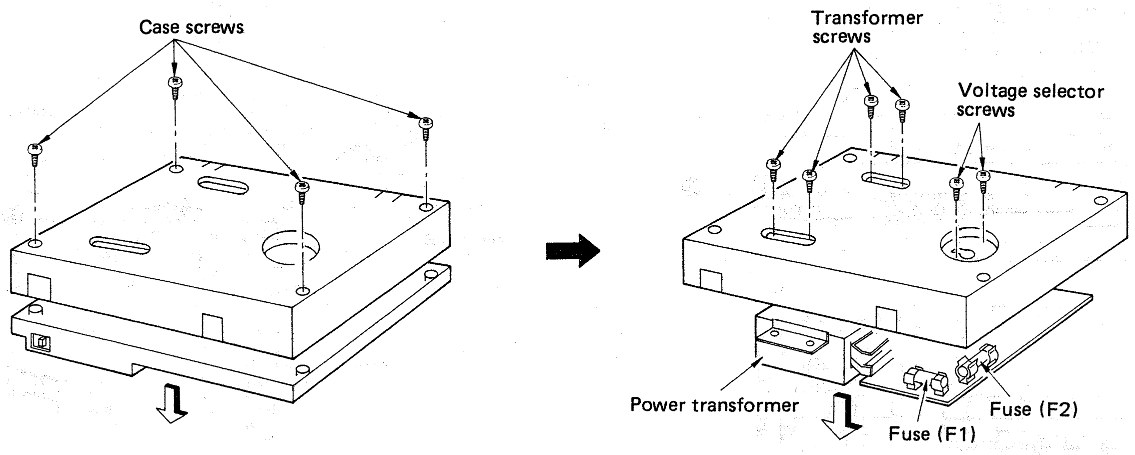
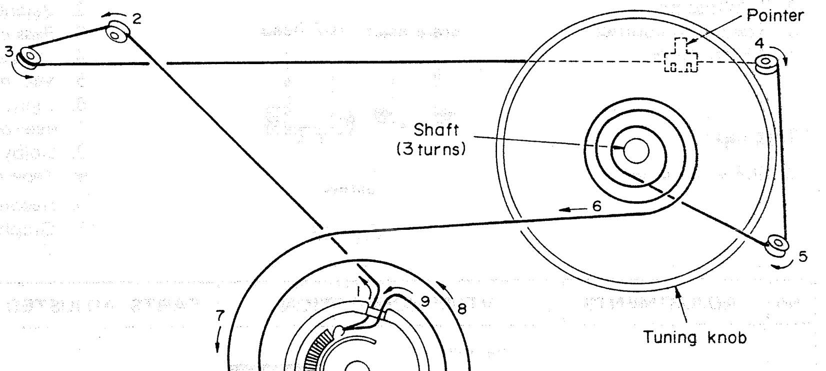

Case screws
Transformer screws
Voltage selector screws
Power transformer
Fuse (F2)
Fuse (F1)

Fig. 22

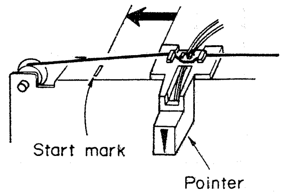
■ DIAL CORD INSTALLATION GUIDE

1. Remove the front panel and tuner printed circuit board according to the "Disassembly instructions".
2. Turn the variable capacitor (dial drum) counterclockwise. (Maximum in frequency, minimum in capacity).
3. Set the dial cord in the order of 1~9 in Fig. 23. (The cord should be about 150cm long.)
4. After setting the dial cord, set the spring so that it is about 1.5~2 times longer than the original length.
5. After setting the dial cord, completely turn the tuning knob counterclockwise.
6. Align the left-hand end of the dial pointer to the start point of the pointer guide as in Fig. 24.



Pointer
1
2
3
4
5
6
7
8
9
Shaft (3 turns)
Tuning knob
Spring
Drum

Fig. 23



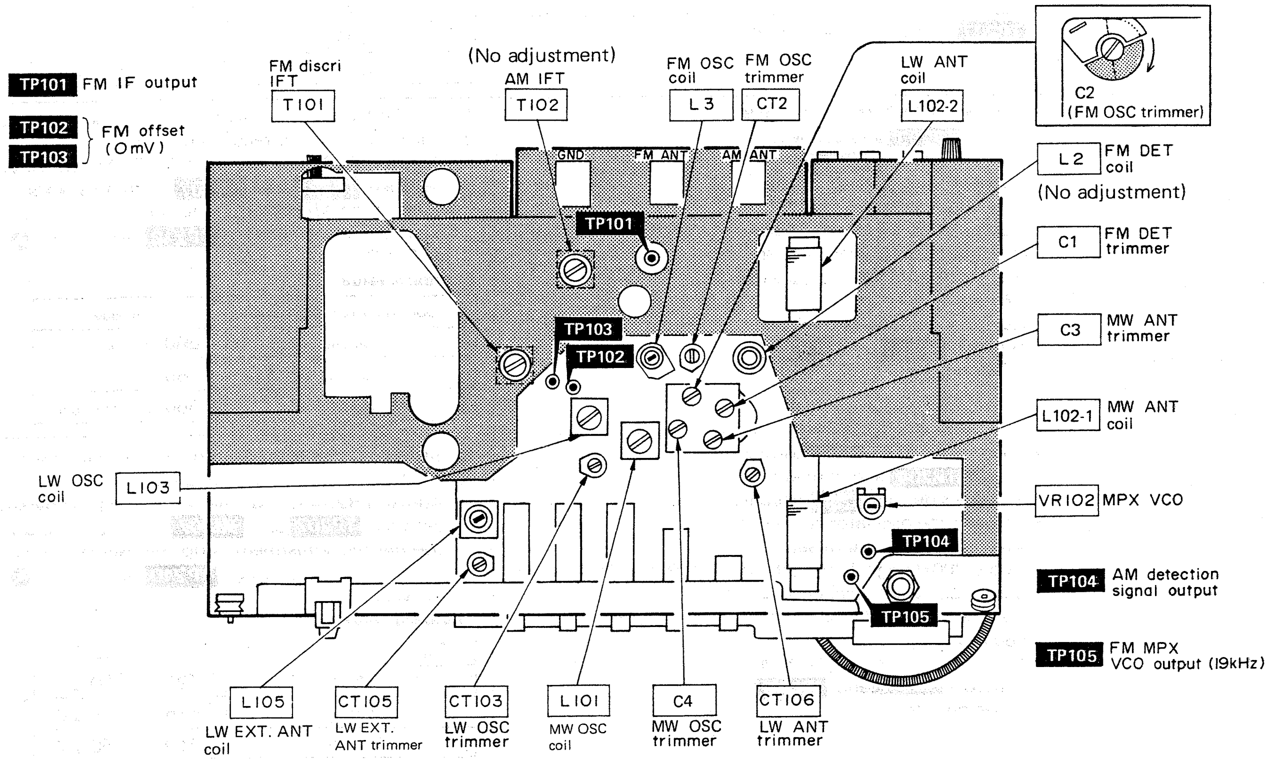
Start mark
Pointer

Fig. 24

■ MEASUREMENTS AND ADJUSTMENTS

- Perform the adjustments according to the "Disassembly instruction" after removing the front panel and cabinet.
- After replacing the record/playback head, remember to make the re-adjustment according to the cassette deck adjustment procedure.
- Do not perform a conduction test of the head by using a circuit tester. If the test has been performed on the head, it should be demagnetized by a demagnetizer.
- When connecting the tester such as oscilloscope on VTVM to the speaker terminal, be sure to connect the L ch. to the (+) and (–) terminals, of L ch. and the R ch. to the (+) and (–) terminals of R ch.
- AM IFT (T102) and FM DET coil (L2) have been already adjusted, and require no adjustment.
- Before start of FM adjustment, completely pull out FM OSC trimmer (C2). (Refer to the diagram for adjustment.)

• Tuner adjustment points



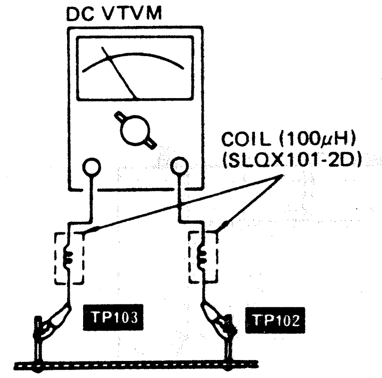
TP101 FM IF output
TP102 TP103 FM offset (OmV)
FM discri IFT
T101
(No adjustment)
AM IFT
T102
FM OSC coil
L3
FM OSC trimmer
CT2
LW ANT coil
L102-2
C2 (FM OSC trimmer)
L2 FM DET coil
(No adjustment)
C1 FM DET trimmer
C3 MW ANT trimmer
L102-1 MW ANT coil
VR102 MPX VCO
TP104 AM detection signal output
TP105 FM MPX VCO output (19kHz)
GND
FM ANT
AM ANT
TP101
TP103
TP102
TP104
TP105
LW OSC coil
L103
L105
LW EXT. ANT coil
CT105
LW EXT. ANT trimmer
CT103
LW OSC trimmer
L101
MW OSC coil
C4
MW OSC trimmer
CT106
LW ANT trimmer

MW/LW TUNER ADJUSTMENT

*** Setting and Equipment used**

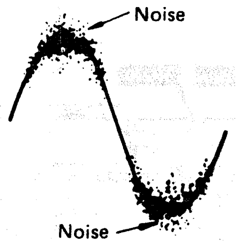
1. AC electronic voltmeter (VTVM)
2. AM signal generator (AM-SG)
3. Maintain line voltage at rated voltage.
4. Output of signal generator should be no higher than necessary to obtain an output reading.
5. Set speaker switch to "on" position.
6. Use a non-metal screwdriver for the adjustment.
7. Set input selector to "tuner" position.
8. Set band selector to "MW and LW" position.
9. AM IFT (T102) have been already adjusted, and require no adjustment.

Step No.	AM SIGNAL GENERATOR		DIAL SETTING	PREPARATIONS	PARTS ADJUSTED	ADJUSTING PROCEDURE
	CONNECTION	FREQUENCY				
	MW-RF ADJUSTMENT * Set band selector "MW" position.					
1	Connect AM-SG to AM antenna terminal through 200pF capacitor. Common to chassis. (Weak input)	600 kHz (30% Mod. with 400 Hz)	600 kHz	Connect AC VTVM or scope to "speaker" terminals of the set.	L101 (OSC Coil) L102-1 (ANT Coil)	Adjust for maximum output.
2		1500 kHz (30% Mod. with 400 Hz)	1500 kHz	Connect AC VTVM or scope to "speaker" terminals of the set.	C4 (OSC Trimmer) C3 (ANT Trimmer)	Adjust for maximum output. Replace steps (1) and (2).
	LW INT-RF ADJUSTMENT * Set band selector to "LW" position.					
3	Connect AM-SG to AM antenna terminal through 200pF capacitor. Common to chassis. (Weak input)	145kHz (30% Mod. with 400 Hz)	145kHz	Connect AC VTVM or scope to "speaker" terminals of the set.	L103 (OSC Coil) L102-2 (ANT Coil)	1. Adjust for maximum output. 2. Adjust L102-2 (LW Coil) by moving coil bobbin along ferrite core.
4		350kHz (30% Mod. with 400 Hz)	350kHz	Connect AC VTVM or scope to "speaker" terminals of the set.	CT103 (OSC Trimmer) CT106 (LW INT ANT Trimmer)	Adjust for maximum output. Repeat steps (3) and (4).
	LW EXT-RF ADJUSTMENT * Set band selector to "LW" position.					
5	Connect AM-SG to AM antenna terminal though 200pF capacitor. Common to chassis. (Weak input).	145kHz (30% Mod. with 400Hz).	145kHz	Connect AC VTVM or scope to "speaker" terminals.	L105 (LW EXT ANT Coil)	1. Adjust for maximum output.
6		350kHz (30% Mod. with 400Hz).	350kHz	Connect AC VTVM or scope to "speaker" terminals.	CT105 (LW EXT ANT Trimmer)	1. Adjust for maximum output. 2. Repeat steps (5) and (6).



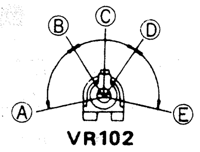
DC VTVM
COIL (100μH) (SLQX101-2D)
TP103
TP102

Fig. 25



AF output wave form

Fig. 26



A – B, D – E Stereo OFF Position.
B – D Stereo ON Position (indicator Lighting).
C Adjust Point of Pilot Circuit

Fig. 27

FM TUNER ADJUSTMENT

*** Equipment used**

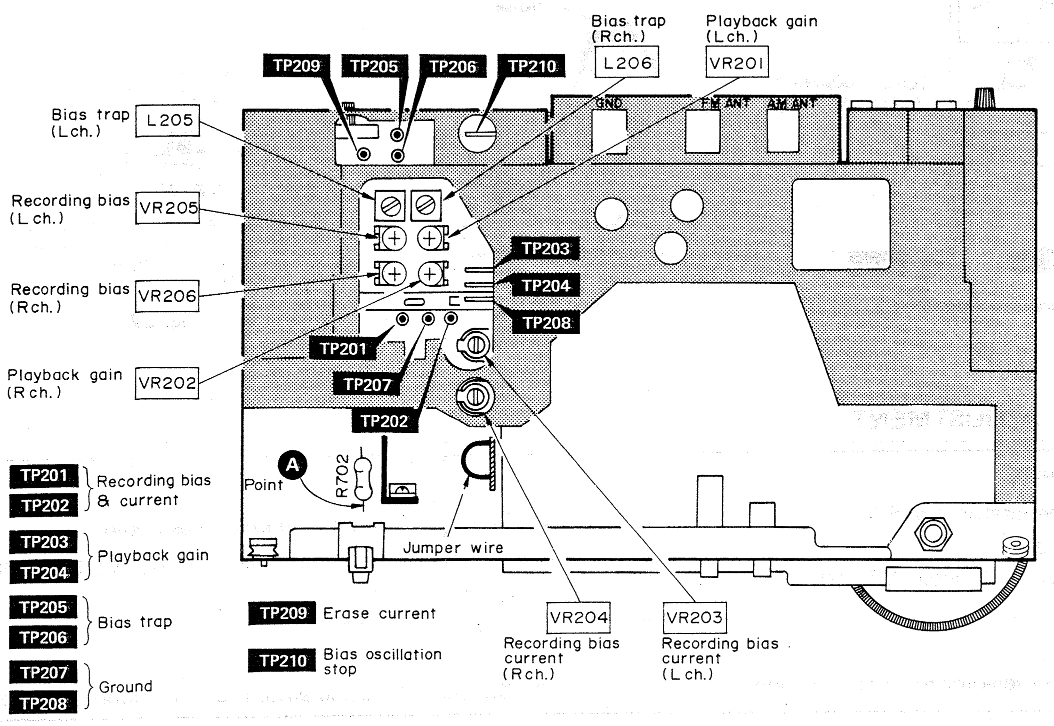
1. FM signal generator (FM-SG).
2. Oscilloscope
3. DC electronic voltmeter (VTVM)
4. Frequency counter (19 kHz measurable)
5. FM DET coil (L2) have been already adjusted, and require no adjustment.

*** Setting**

1. Set the band selector to "FM" position.
2. Set the FM muting switch to "off/mono" position.

<table>
<tr><th rowspan="2">Step No.</th><th colspan="2">FM SIGNAL GEN ERATOR</th><th rowspan="2">DIAL SETTING</th><th rowspan="2">PREPARATIONS</th><th rowspan="2">PARTS ADJUSTED</th><th rowspan="2">ADJUSTING PROCEDURE</th></tr>
<tr><th>CONNECTION</th><th>FREQUENCY</th></tr>
<tr><td></td><td colspan="6">FM-IF ADJUSTMENT</td></tr>
<tr><td>1</td><td>—</td><td>No-signal</td><td>98 MHz</td><td>Connect DC VTVM between TP102 and TP103 through choke coil. (Refer to Fig. 25)</td><td>T101 (Discri. IFT)</td><td>Adjust T101 core so that voltage measured in signal mode is 0mV in 300 mV range.</td></tr>
<tr><td></td><td colspan="6">FM FREQUENCY ADJUSTMENT</td></tr>
<tr><td>2</td><td rowspan="2">Connect FM SG to telescopic whip antenna terminal. (Apply 66dB to antenna terminal.)</td><td>87.35MHz (100% Mod. with 400 Hz) weak input</td><td>Dial minimum</td><td>Connect scope to "speaker" terminals of the set.</td><td>L3 (OSC coil)</td><td rowspan="2">1. Add weak input so that noise is included in the output wave form.
2. Make the adjustment so that the output wave form is vertically symmetrical. Refer to Fig. 26.
3. Repeat the steps (2) and (3) until the frequency correctly matches the each dial end.</td></tr>
<tr><td>3</td><td>108.25MHz (100% Mod. with 400 Hz) weak input</td><td>Dial maximum</td><td>Connect scope to "speaker" terminals of the set.</td><td>CT2 (OSC trimmer)</td></tr>
<tr><td></td><td colspan="6">FM SENSITIVITY ADJUSTMENT</td></tr>
<tr><td>4</td><td>Connect FM SG to telescopic whip antenna terminal. (Apply 66dB to antenna terminal.)</td><td>106MHz (100% Mod. with 400Hz) weak input</td><td>106MHz</td><td>Connect scope to "speaker" terminals of the set.</td><td>C1 (RF DET trimmer)</td><td>1. Add weak input so that noise is included in the output wave form.
2. Make the adjustment so that the output wave form is vertically symmetrical. Refer to Fig. 26.</td></tr>
<tr><td></td><td colspan="6">FM MPX PILOT ALIGNMENT</td></tr>
<tr><td></td><td colspan="3">Using a frequency counter</td><td colspan="3">Using alternate system</td></tr>
<tr><td>5</td><td colspan="3">1. 100MHz non-modulated mono signal applied to set.
2. Set the FM muting switch to "on/auto" position.
3. Connect frequency counter to TP105 through resistor (100kΩ).
4. Adjust VR102 to 19kHz ±30Hz.</td><td colspan="3">1. Apply stereo signal from generator or stereo station receiver.
2. Adjust VR102 until stereo indicator lights up. Cement arm of of VR102 as shown in Fig. 27.</td></tr>
</table>

CASSETTE DECK ADJUSTMENT



***Equipment used**

1. AC electronic voltmeter (VTVM).
2. Oscilloscope
3. Frequency counter
4. AF oscillator

***Test tape**

QZZCFM (Fig. 29)

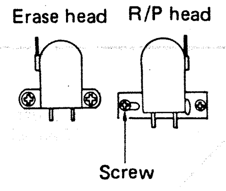


Fig. 28

***Setting**

1. Volume control . . . . 0 (minimum)
2. Balance control . . . . 0 (center)
3. Bass control . . . . 0 (center)
4. Treble control . . . . 0 (center)
5. Mic. mixing control . . . . source
6. Input selector . . . . tape
7. Beat proof . . . . A
8. Dolby NR . . . . out
9. Tape selector . . . . normal
10. Record level control . . . . . . 10 (maximum)
11. Graphic equalizer . . . off

<table>
<tr><th>No.</th><th>ADJUSTMENTS</th><th>VTVM CONNECTION</th><th>PARTS ADJUSTED</th><th>ADJUSTING PROCEDURE</th></tr>
<tr><td>1</td><td>Head azimuth</td><td>(L channel)
• Connect positive side to TP203 and connect negative side to TP208 (ground) – See fig. 30.
(R channel)
• Connect positive side to TP204 and connect negative side to TP208 (ground) – See fig. 30.</td><td>Record/playback head angle adjustment screw.
(Refer to fig. 28)</td><td>1. Play azimuth tape (QZZCFM 8 kHz.)
2. Adjust record/playback head angle adjustment screw. So that output level becomes maximum.
3. Measure both channels and adjust levels for equal output.
4. After adjustment lock head adjustment screw with lacquer.</td></tr>
<tr><td>2</td><td>Erase current</td><td>• Connect positive side to TP209 and connect negative side to TP208 (ground) – See fig. 31.</td><td>Jumper wire</td><td>1. Set the tape selector switch to "metal" position.
2. Shift the unit into recording mode.
3. If the voltmeter reading exceeds 170mV, cut off the yellow jumper wire which is in parallel with R280 of the tape selector circuit.
Standard value
<table>
<tr><th>Tape selector position</th><th>Voltage</th></tr>
<tr><td>Metal</td><td>145 ~ 170 mV</td></tr>
<tr><td>CrO₂</td><td>90 ~ 130 mV</td></tr>
<tr><td>Normal</td><td>40 ~ 110 mV</td></tr>
</table></td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">Record bias</td><td>• Connect positive side to TP201 and connect negative side to TP207 (ground) – See fig. 32.</td><td>VR205 (L channel)</td><td rowspan="2">1. Set the tape selector switch to "normal" position.
2. Shift the unit into recording mode.
3. Adjust VR205 and VR206 for 4.1 mV reading on VTVM.
Standard value
<table>
<tr><th>Tape selector position</th><th>Voltage</th></tr>
<tr><td>Metal</td><td>6.4 ~ 10.6 mV</td></tr>
<tr><td>CrO₂</td><td>4.1 ~ 6.9 mV</td></tr>
<tr><td>Normal</td><td>3.1 ~ 5.1 mV</td></tr>
</table></td></tr>
<tr><td>• Connect positive side to TP202 and connect negative side to TP207 (ground) – See fig. 32.</td><td>VR206 (R channel)</td></tr>
<tr><td rowspan="2">4</td><td rowspan="2">Record bias current</td><td>• Connect AC VTVM of positive side to TP203 and connect negative side to TP208 (ground).
• Connect the oscillator to the Aux. input terminal of set.
• Apply 400Hz signal, and adjust the output of AF oscillator so that the AC VTVM indicates 580mV.
• Next, connect the AC VTVM between TP201 and TP207 – See fig. 33.</td><td>VR203 (L channel)</td><td>1. Set the tape selector switch to "normal" position.
2. Shift the unit into recording mode.
3. Adjust VR203 so that the AC VTVM connected between TP201 and TP207 indicates 600μV. (Before the adjustment, stop the oscillation by short-circuiting between TP210 and point Ⓐ of R702.
Standard value
<table>
<tr><th>Tape selector position</th><th>Voltage</th></tr>
<tr><td>Metal</td><td>690 ~ 1090 μV</td></tr>
<tr><td>CrO₂</td><td>585 ~ 925 μV</td></tr>
<tr><td>Normal</td><td>560 ~ 650 μV</td></tr>
</table></td></tr>
<tr><td>• Connect AC VTVM of positive side to TP204 and connect negative side to TP208 (ground).
• Connect the oscillator to the Aux. input terminal of set.
• Apply 400Hz signal, and adjust the output of AF oscillator so that the AC VTVM indicates 580 mV.
• Next, connect the AC VTVM. between TP202 and TP207 – See fig. 33.</td><td>VR204 (R channel)</td><td>1. Set the tape selector switch to "normal" position.
2. Shift the unit into recording mode.
3. Adjust VR204 so that the AC VTVM connected between TP202 and TP207 indicates 600 μV. (Before the adjustment, stop the oscillation by short-circuiting between TP210 and point Ⓐ of R702.
Standard value
<table>
<tr><th>Tape selector position</th><th>Voltage</th></tr>
<tr><td>Metal</td><td>690 ~ 1090 μV</td></tr>
<tr><td>CrO₂</td><td>585 ~ 925 μV</td></tr>
<tr><td>Normal</td><td>560 ~ 650 μV</td></tr>
</table></td></tr>
</table>

No.	ADJUSTMENTS	VTVM CONNECTION	PARTS ADJUSTED	ADJUSTING PROCEDURE
5	Record bias trap coil	• Connect positive side to **TP205** and connect negative side to chassis (ground).	L205 (L channel)	1. Set the tape selector switch to "normal" position. 2. Shift the unit into recording mode. 3. Adjust for minimum voltage indication of the AC VTVM. **Standard value** Less than 150mV.
		• Connect positive side to **TP206** and connect negative side to chassis (ground).	L206 (R channel)	
6	Playback gain	• Connect positive side to **TP203** and connect negative side to **TP208** (ground).	VR201 (L channel)	1. Set the tape selector switch to "normal" position. 2. Playback the 315Hz (0dB) frequency characteristic test tape. Then adjust VR201 and VR202 so that the output becomes 411mV. **Standard value** 388 ~ 435mV.
		• Connect positive side to **TP204** and connect negative side to **TP208** (ground).	VR202 (R channel)	

QZZCFM
(Test tape)

Frequency level

Recording level	–20 dB and 0 dB, 160nWb/m
315 Hz	0 dB
8 kHz	–20 dB
12.5 kHz ~ 63 Hz	–20 dB
Equalizer	12μS, 3180μS
Recording time	4 min.
Tape speed	4.75 cm/sec.

Controls of recording

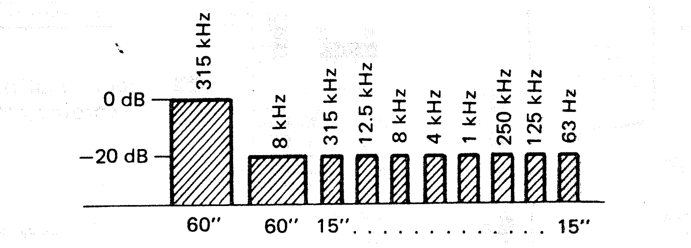


Fig. 29

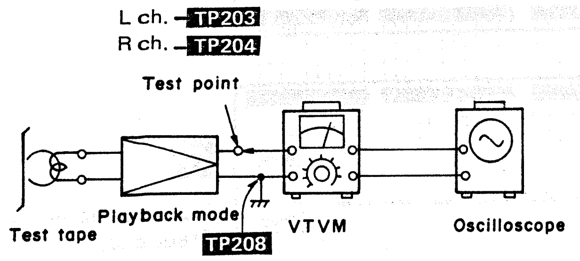

L ch. – TP203
R ch. – TP204
Test point
Playback mode
Test tape
TP208
VTVM
Oscilloscope

Fig. 30

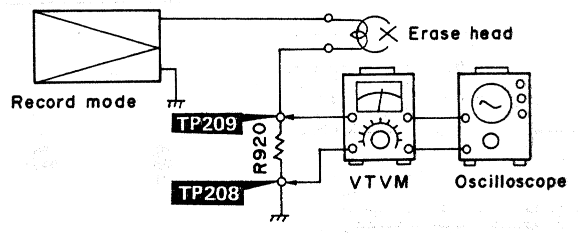

Erase head
Record mode
TP209
R920
TP208
VTVM
Oscilloscope

Fig. 31

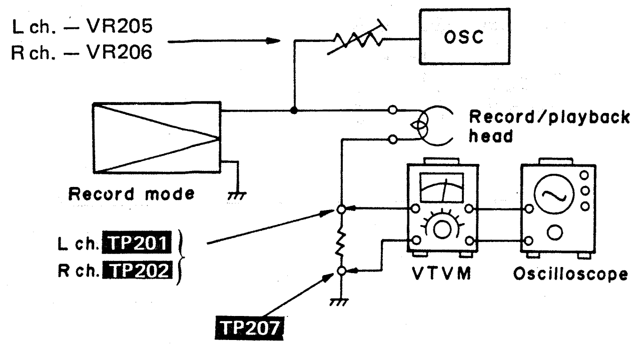

L ch. – VR205
R ch. – VR206
OSC
Record/playback head
Record mode
L ch. TP201
R ch. TP202
VTVM
Oscilloscope
TP207

Fig. 32

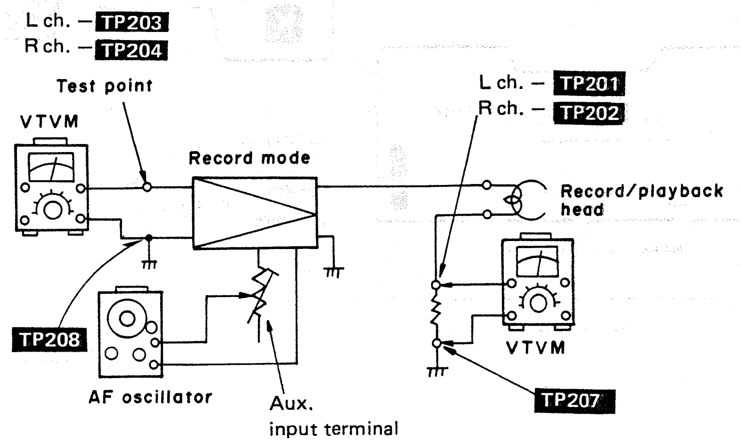

L ch. – TP203
R ch. – TP204
Test point
VTVM
Record mode
L ch. – TP201
R ch. – TP202
Record/playback head
TP208
AF oscillator
Aux. input terminal
VTVM
TP207

Fig. 33

HOW TO REPLACE CHIPS (Resistors & Jumpers)

1. Unsolder from chip by using solder sucker.
2. Remove chip with tweezers by rotating it while removing solder as shown in Fig. 34.
3. Solder circuit board first and then soler chip in the direction of the arrow as shown in Fig. 35 and Fig. 36.

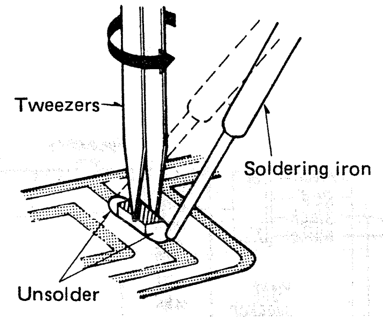

Tweezers
Soldering iron
Unsolder

Fig. 34

- **Note for replacing chips**

1. Do no heat chips more than three (3) seconds.
2. Be careful not to damage the electrode of chips.
3. Use soldering iron (less than 60W) and tweezers for replacing chips.

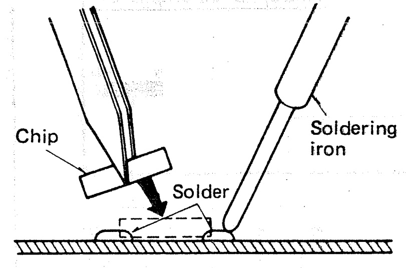

Chip
Soldering iron
Solder

Fig. 35

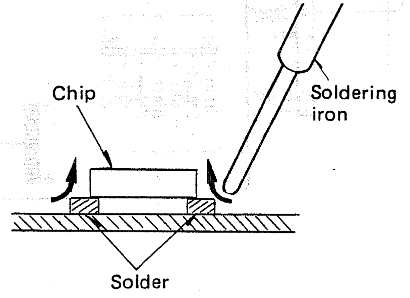
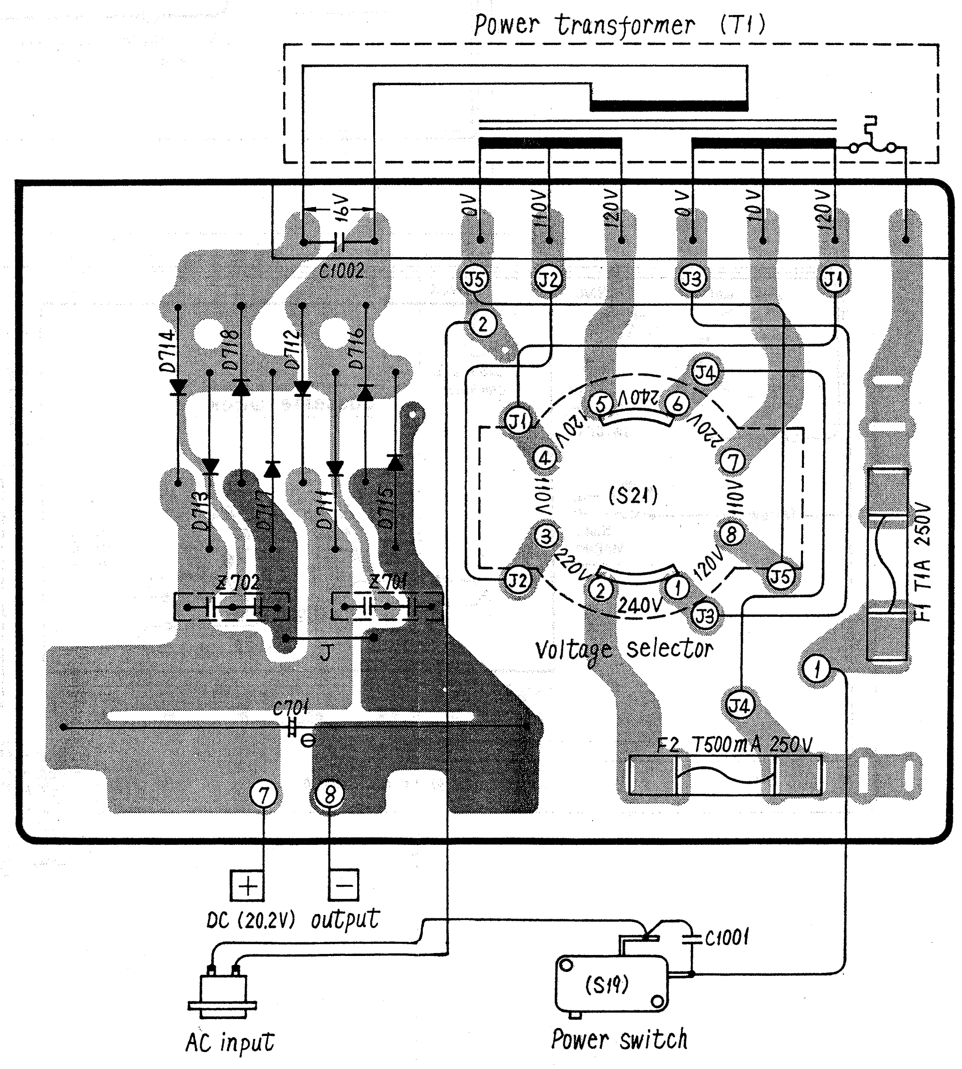

Chip
Soldering iron
Solder

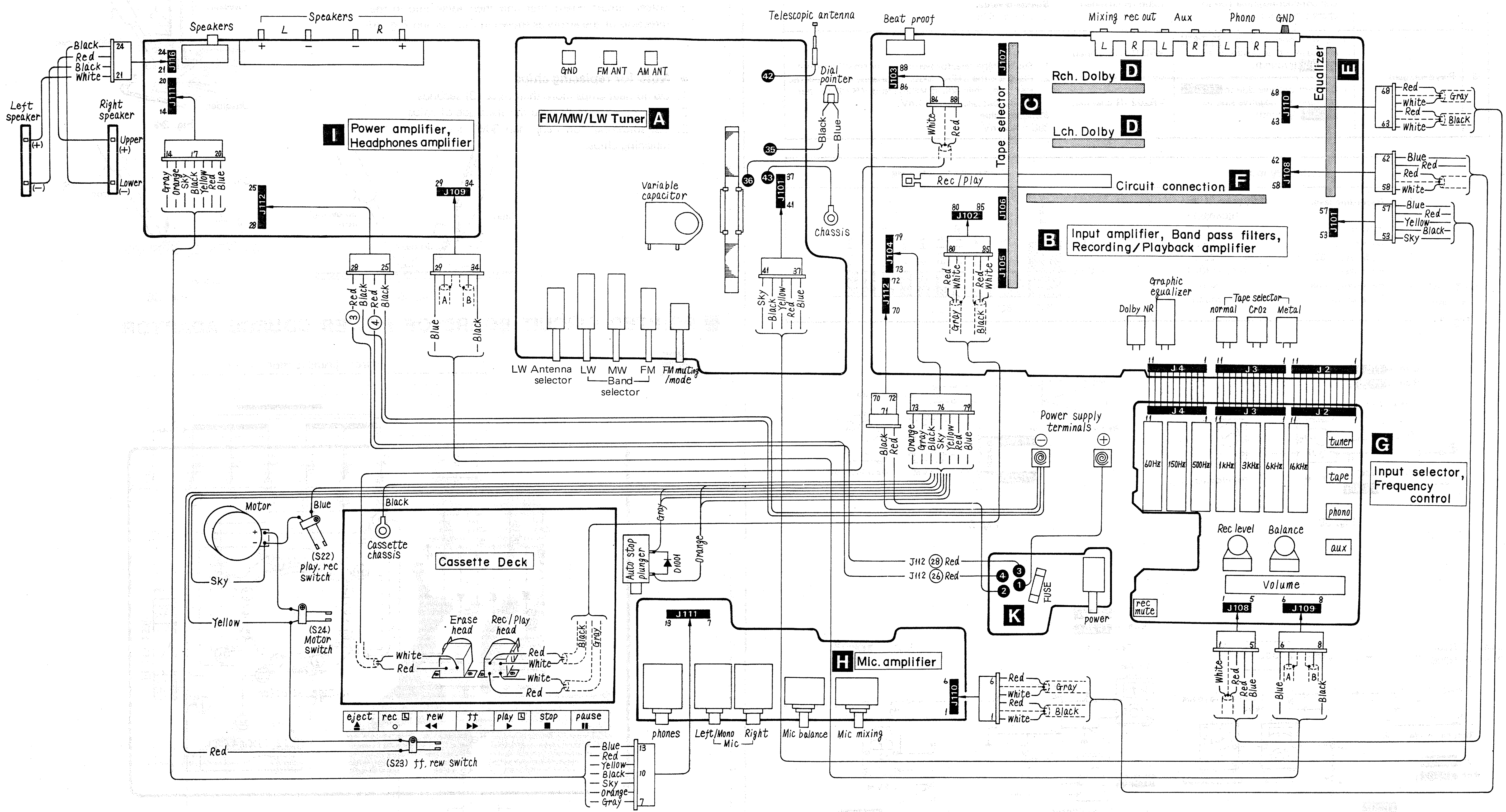
Fig. 36

PRINTED CIRCUIT BOARD OF POWER SOURCE ADAPTOR

L


Power transformer (T1)
16V
C1002
0V
110V
120V
0V
10V
120V
J5
J2
J3
J1
2
D714
D718
D712
D716
D713
D717
D711
D715
Z702
Z701
J
C701
J4
J1
5
240V
6
120V
220V
4
7
110V
(S21)
110V
3
8
J2
220V
2
240V
1
120V
J5
J3
Voltage selector
F1 T1A 250V
1
J4
F2 T500mA 250V
7
8
+
–
DC (20.2V) output
C1001
(S19)
AC input
Power switch

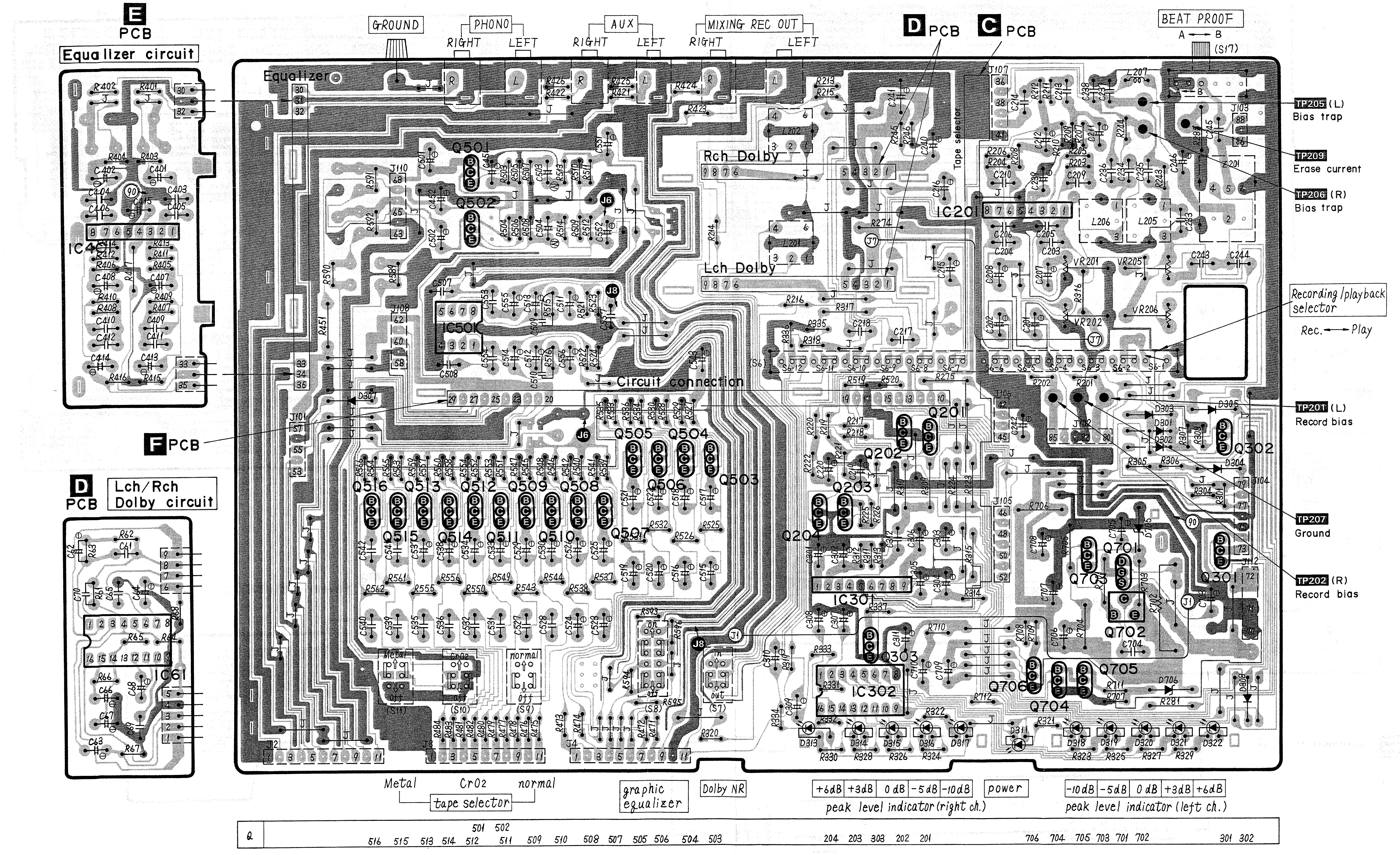
■ PRINTED CIRCUIT BOARD WIRING CONNECTION DIAGRAM
(P.C.B. Top view)


Speakers
Speakers
L
R
+
−
Black
Red
Black
White
24
21
Left speaker
Right speaker
(+)
(−)
Upper (+)
Lower (−)
J116
J111
20
14
17
Gray
Orange
Sky
Black
Yellow
Red
Blue
25
28
J112
29
34
J109
I
Power amplifier, Headphones amplifier
Red
Black
Red
Black
③
④
A
B
Blue
Black
GND
FM ANT
AM ANT
FM/MW/LW Tuner
A
Variable capacitor
LW Antenna selector
LW
MW
FM
Band selector
FM muting/mode
Telescopic antenna
Dial pointer
Black
Blue
42
35
36
43
J101
37
41
Sky
Black
Yellow
Red
Blue
Chassis
Beat proof
J103
88
86
White
Red
Tape selector
C
J107
J106
J105
Rec/Play
J102
80
85
Red
White
Red
White
Gray
Black
J104
79
73
J112
72
70
Rch. Dolby
D
Lch. Dolby
D
Circuit connection
F
Input amplifier, Band pass filters, Recording/Playback amplifier
B
Mixing rec out
Aux
Phono
GND
L
R
Equalizer
E
J110
68
63
J108
62
58
J101
57
53
Red
White
Red
White
Gray
Black
Blue
Red
Red
White
Blue
Red
Yellow
Black
Sky
Graphic equalizer
Dolby NR
Tape selector
normal
CrO2
Metal
J4
J3
J2
70
72
71
Black
Red
73
76
79
Orange
Gray
Black
Sky
Yellow
Red
Blue
Power supply terminals
⊖
⊕
60Hz
150Hz
500Hz
1kHz
3kHz
6kHz
16kHz
tuner
tape
phono
aux
G
Input selector, Frequency control
Rec level
Balance
Volume
rec mute
J108
J109
1
5
6
8
White
Red
Red
Blue
Blue
A
B
Black
J112 ㉘ Red
J112 ㉖ Red
④
③
②
①
FUSE
K
power
Motor
Blue
Black
(S22) play, rec switch
Cassette chassis
Cassette Deck
Sky
Yellow
(S24) Motor switch
Erase head
Rec/Play head
White
Red
Red
White
White
Red
Black
Gray
eject ⏏
rec ○
rew ◀◀
ff ▶▶
play ▶
stop ■
pause ❚❚
Red
(S23) ff, rew switch
Blue
Red
Yellow
Black
Sky
Orange
Gray
13
10
7
Auto stop plunger
D1001
Gray
Orange
J111
13
7
H
Mic. amplifier
J110
6
1
Red
White
Red
White
Gray
Black
phones
Left/Mono
Right
Mic
Mic balance
Mic mixing

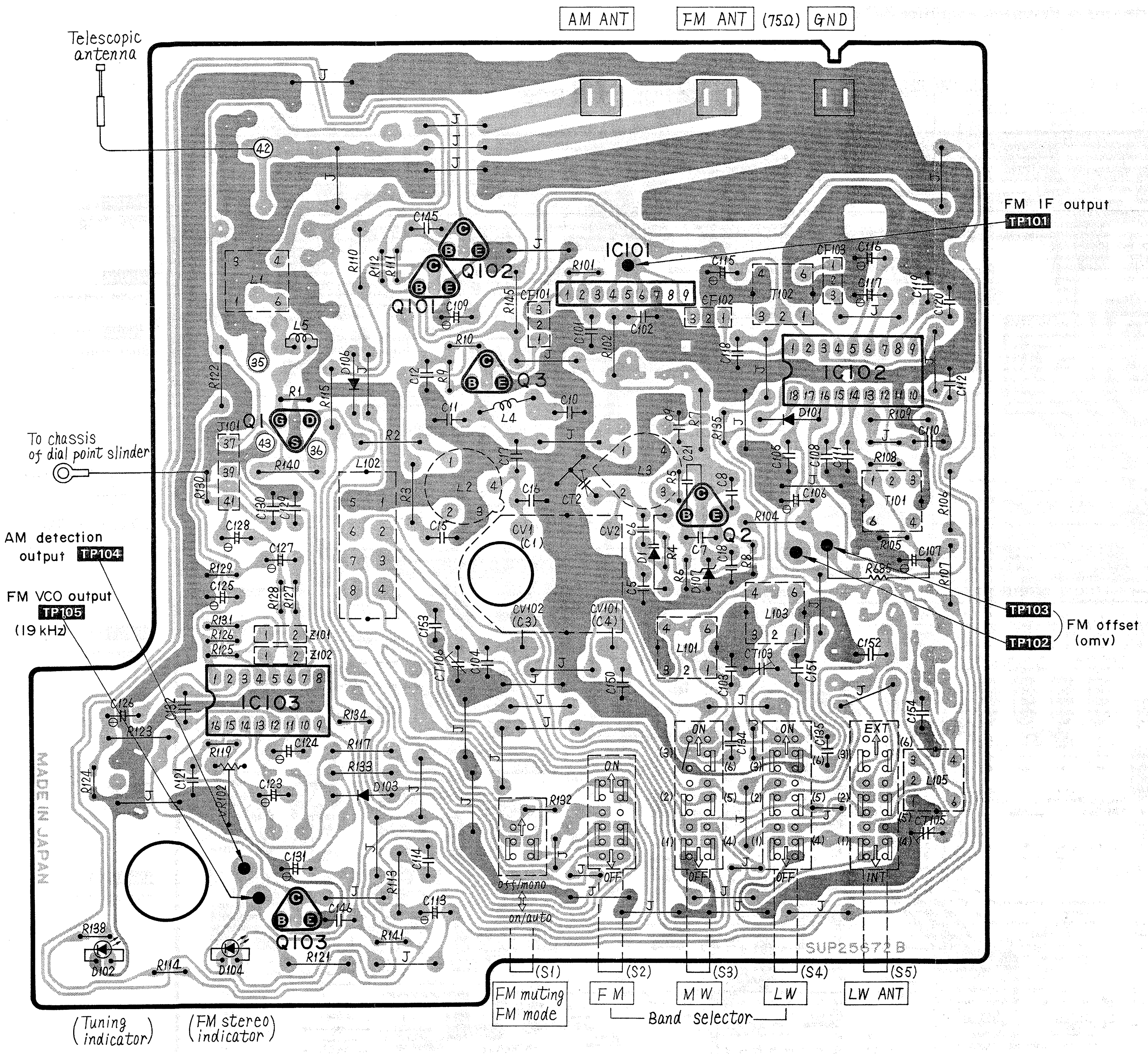
■ PRINTED CIRCUIT BOARDS (Bottom view)

B (Input amplifier, Band pass filter, Record & Playback amplifier P.C.B.)

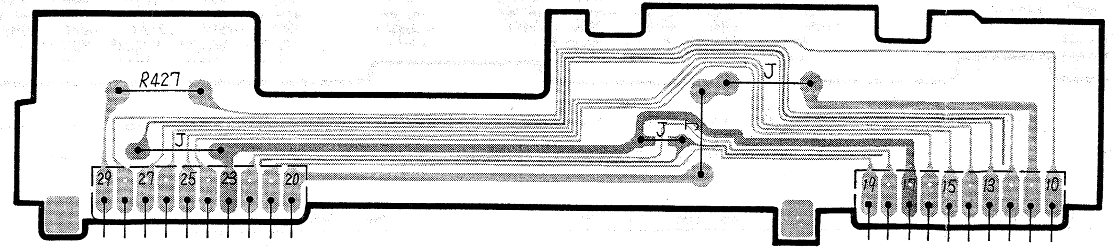
▨ Ground (Earth) Lines


E PCB
Equalizer circuit
IC401
GROUND
PHONO
RIGHT
LEFT
AUX
RIGHT
LEFT
MIXING REC OUT
RIGHT
LEFT
D PCB
C PCB
BEAT PROOF
A ⟷ B
(S17)
TP205 (L) Bias trap
TP209 Erase current
TP206 (R) Bias trap
Recording/playback selector
Rec. ⟷ Play
TP201 (L) Record bias
TP207 Ground
TP202 (R) Record bias
Equalizer
Rch Dolby
Lch Dolby
Tape selector
IC201
IC501
Circuit connection
F PCB
D PCB
Lch/Rch Dolby circuit
IC61
IC301
IC302
Q501
Q502
Q503
Q504
Q505
Q506
Q507
Q508
Q509
Q510
Q511
Q512
Q513
Q514
Q515
Q516
Q201
Q202
Q203
Q204
Q301
Q302
Q303
Q701
Q702
Q703
Q704
Q705
Q706
Metal
CrO2
normal
tape selector
graphic equalizer
Dolby NR
+6dB
+3dB
0 dB
-5dB
-10dB
peak level indicator (right ch.)
power
-10dB
-5dB
0 dB
+3dB
+6dB
peak level indicator (left ch.)
Q
501 502
516 515 513 514 512 511 509 510 508 507 505 506 504 503
204 203 303 202 201
706 704 705 703 701 702
301 302

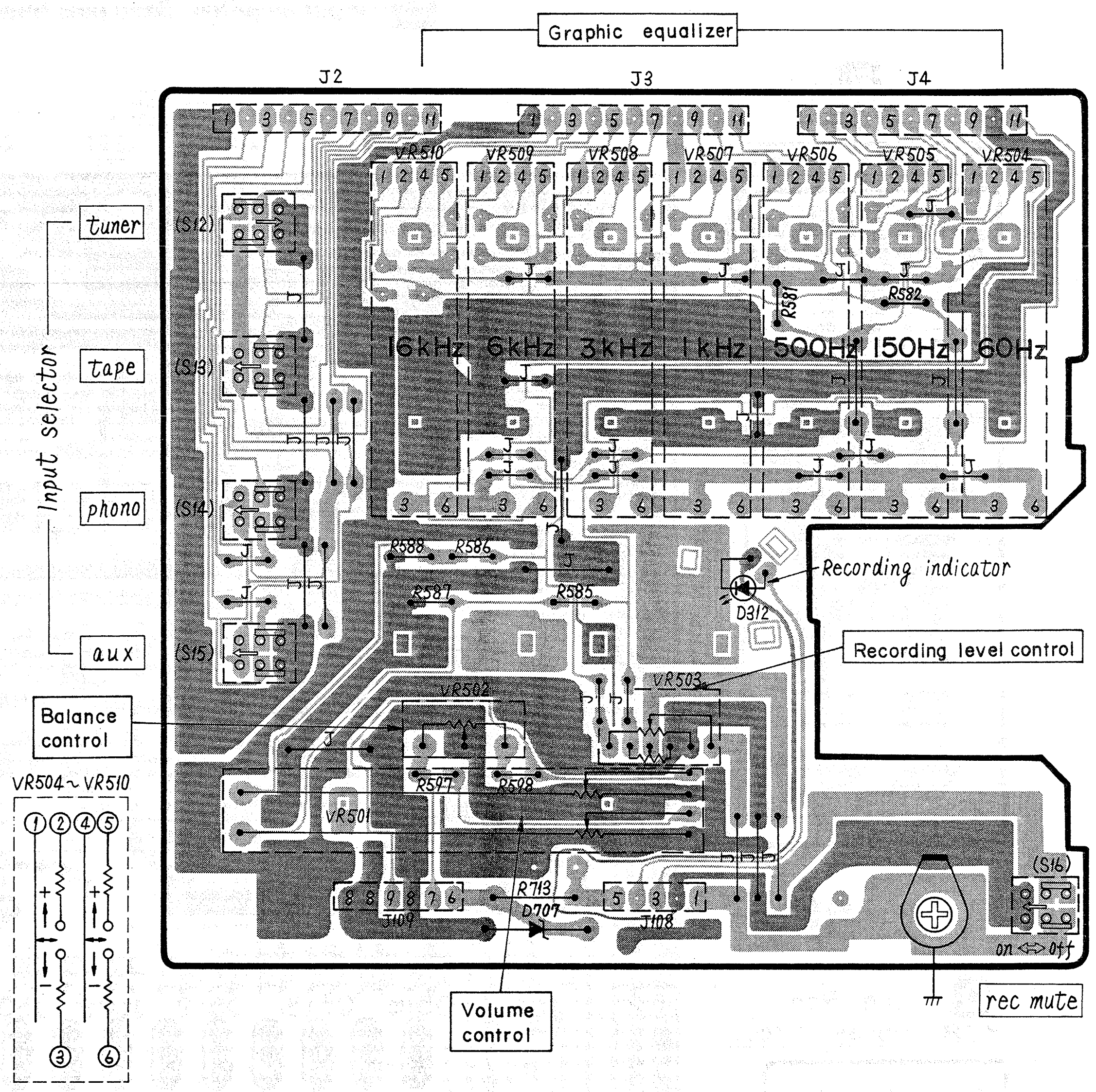
A (FM/MW/LW tuner P.C.B.)


AM ANT
FM ANT
(75Ω)
GND
Telescopic antenna
FM IF output
TP101
IC101
IC102
IC103
Q101
Q102
Q1
Q2
Q3
Q103
To chassis of dial point slinder
AM detection output
TP104
FM VCO output
TP105
(19 kHz)
TP103
TP102
FM offset (omv)
MADE IN JAPAN
SUP25672B
off/mono
on/auto
ON
OFF
EXT
INT
(S1)
(S2)
(S3)
(S4)
(S5)
FM muting
FM mode
FM
MW
LW
LW ANT
Band selector
Tuning indicator
FM stereo indicator
D102
D104

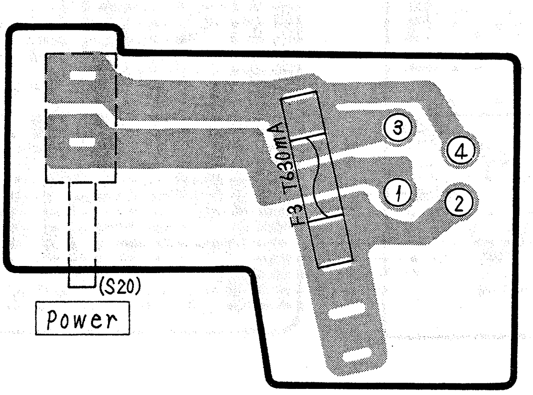
F (Connection P.C.B.)


R427
J
29
27
25
23
20
19
17
15
13
10

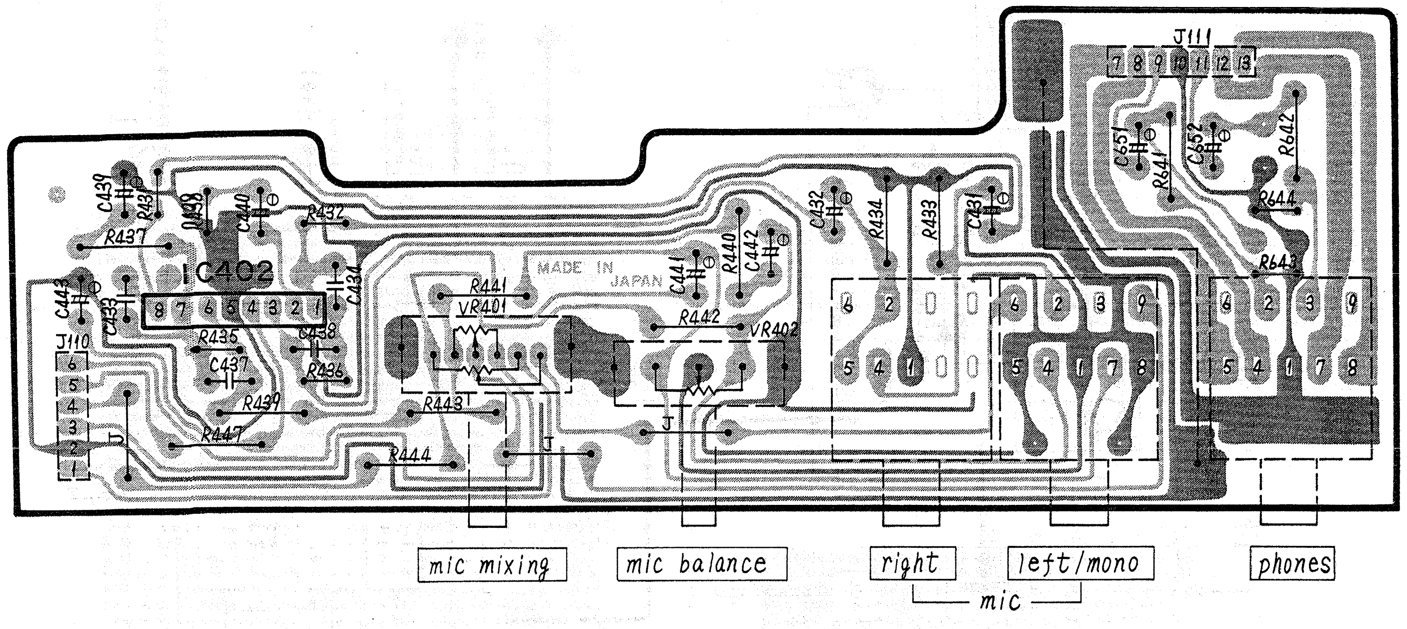
G (Input selector & Frequency level control P.C.B.)


Graphic equalizer
J2
J3
J4
VR510
VR509
VR508
VR507
VR506
VR505
VR504
16kHz
6kHz
3kHz
1kHz
500Hz
150Hz
60Hz
tuner
tape
phono
aux
Input selector
(S12)
(S13)
(S14)
(S15)
Recording indicator
D312
Recording level control
VR503
VR502
VR501
Balance control
VR504~VR510
Volume control
D707
J109
J108
(S16)
on ⇔ off
rec mute

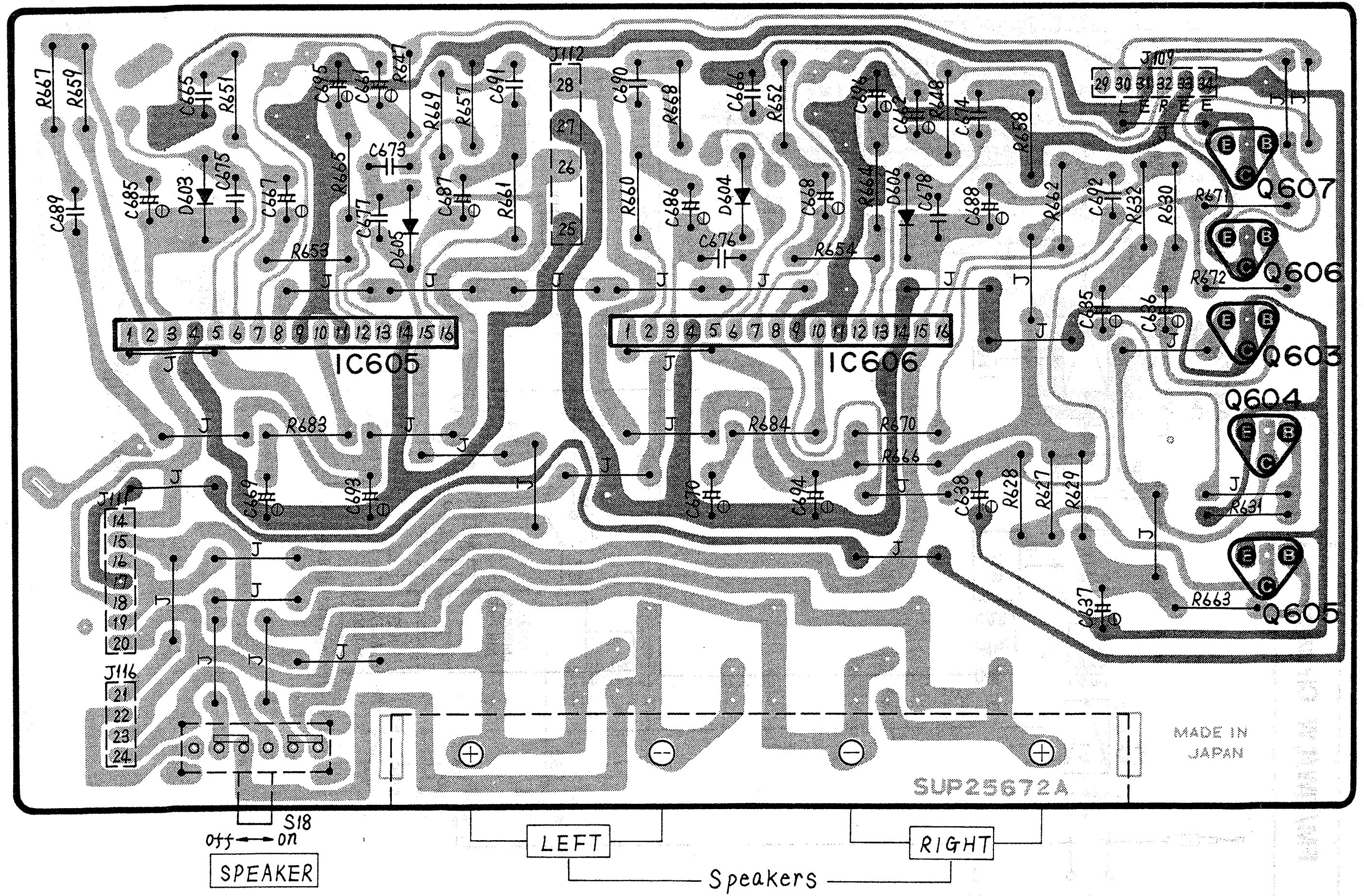
K (Power switch P.C.B.)


F3 T630mA
①
②
③
④
(S20)
Power

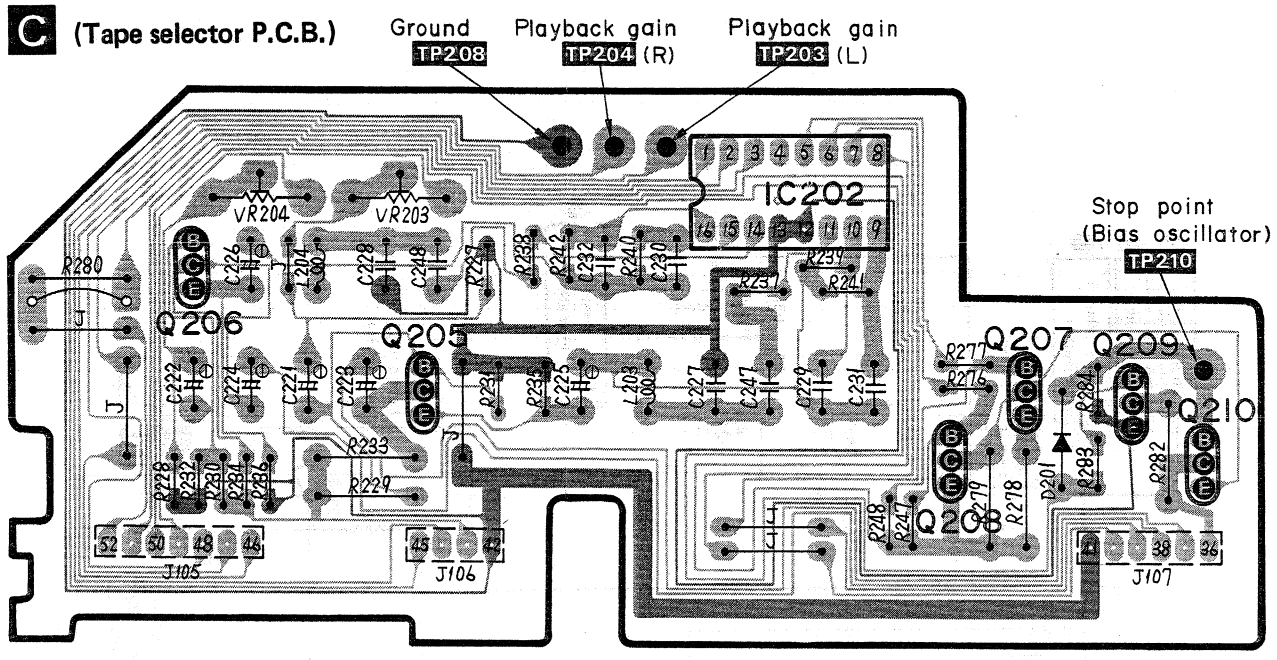
H (Microphone amplifier P.C.B.)


J111
IC402
VR401
VR402
J110
MADE IN JAPAN
mic mixing
mic balance
right
left/mono
mic
phones

I (Power amplifier P.C.B.)

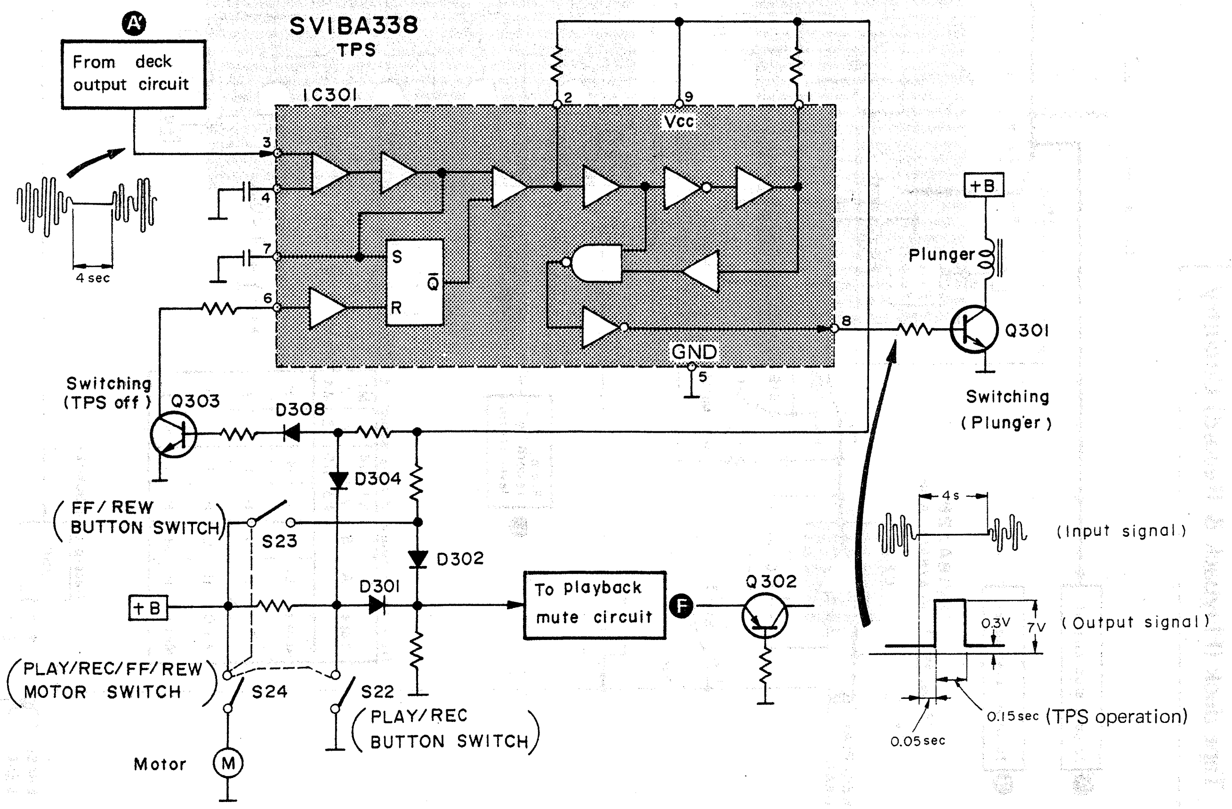

J112
J109
IC605
IC606
Q607
Q606
Q603
Q604
Q605
J115
J116
MADE IN JAPAN
SUP25672A
S18
off — on
SPEAKER
LEFT
RIGHT
Speakers

C (Tape selector P.C.B.)


Ground
TP208
Playback gain
TP204 (R)
Playback gain
TP203 (L)
Stop point
(Bias oscillator)
TP210
IC202
VR204
VR203
Q206
Q205
Q207
Q209
Q210
Q208
J105
J106
J107

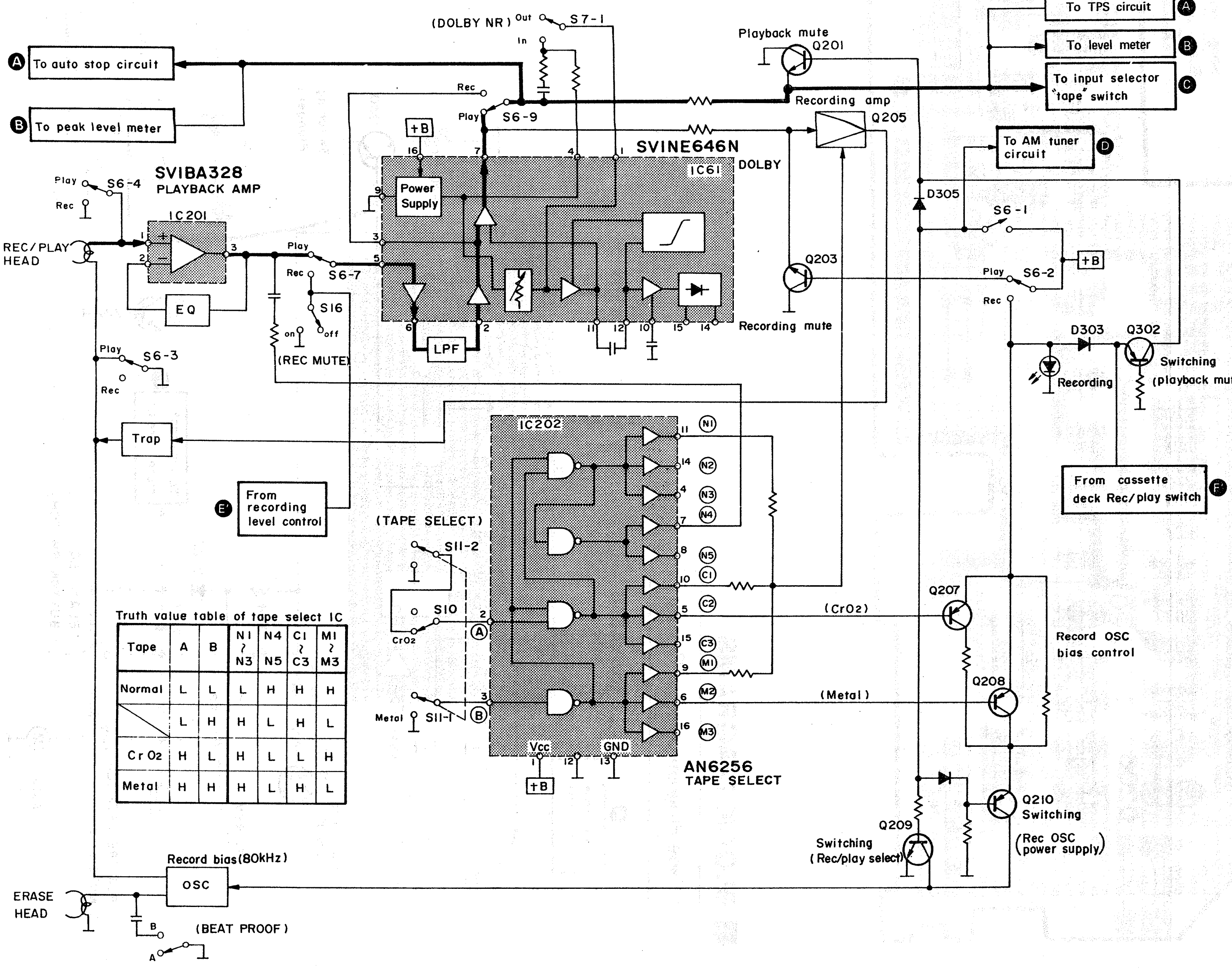
BLOCK DIAGRAMS

Tape Program Selector Circuitry


A
From deck output circuit
SVIBA338
TPS
IC301
Vcc
GND
4 sec
Switching (TPS off)
Q303
D308
D304
D302
D301
FF/REW BUTTON SWITCH
S23
+B
PLAY/REC/FF/REW MOTOR SWITCH
S24
S22
PLAY/REC BUTTON SWITCH
Motor
M
To playback mute circuit
F
Q302
+B
Plunger
Q301
Switching (Plunger)
4s
(Input signal)
0.3V
7V
(Output signal)
0.05sec
0.15sec (TPS operation)

23

Tape deck (Playback & Record) Circuitry

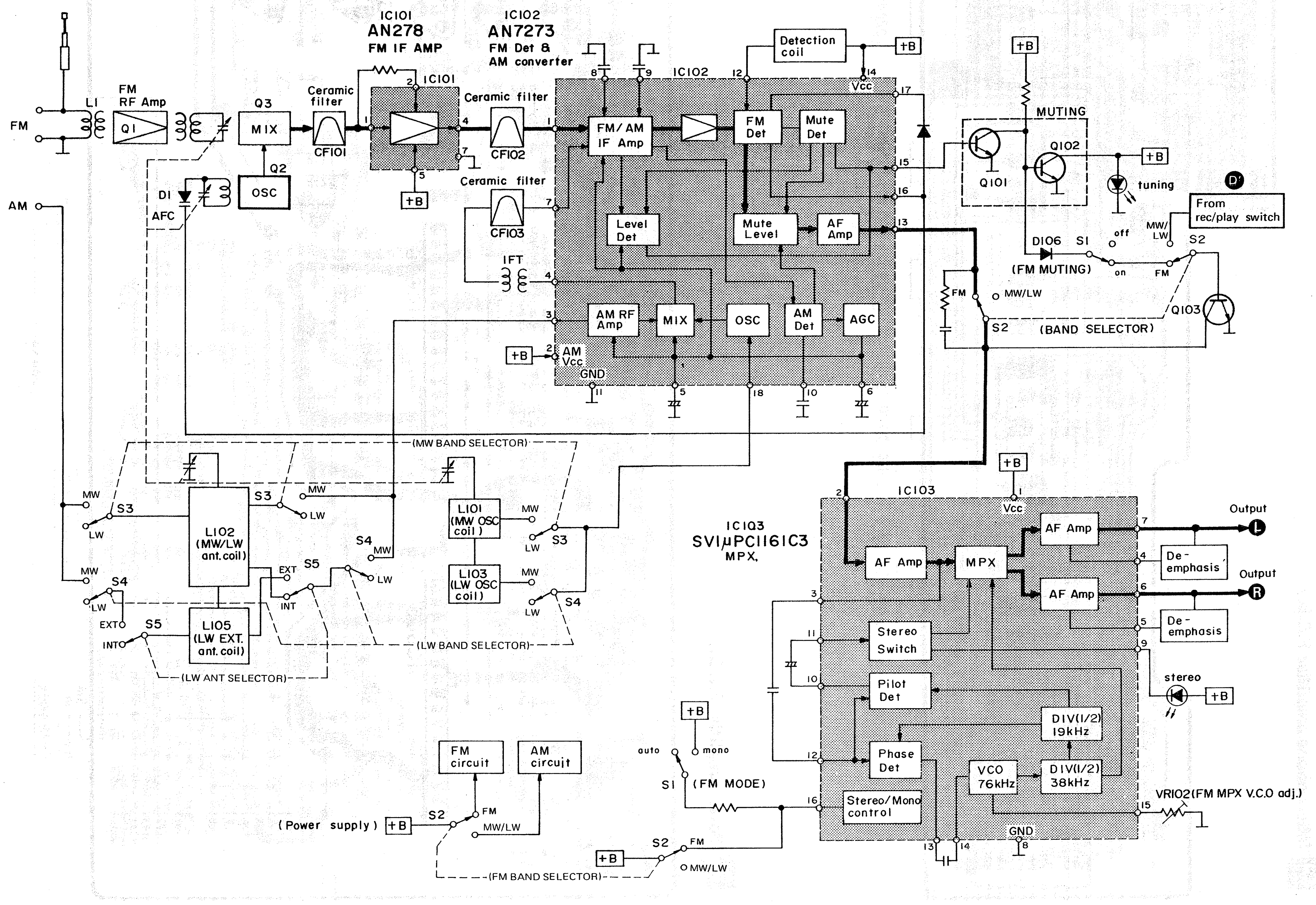

To auto stop circuit
To peak level meter
(DOLBY NR) Out In S7-1
Playback mute Q201
Recording amp Q205
To TPS circuit
To level meter
To input selector "tape" switch
To AM tuner circuit
S6-9
Rec
Play
+B
SVINE646N DOLBY
IC61
Power Supply
LPF
Play S6-4 Rec
SVIBA328 PLAYBACK AMP
IC201
REC/PLAY HEAD
EQ
S6-7
S16 on off
(REC MUTE)
Play S6-3 Rec
Trap
From recording level control
Q203
Recording mute
D305
S6-1
S6-2
Play
Rec
D303
Q302
Switching (playback mute)
Recording
From cassette deck Rec/play switch
IC202
(TAPE SELECT)
S11-2
S10
CrO2
Metal
S11-1
N1 N2 N3 N4 N5 C1 C2 C3 M1 M2 M3
Vcc
GND
AN6256 TAPE SELECT
(CrO2)
(Metal)
Q207
Record OSC bias control
Q208
Q210 Switching (Rec OSC power supply)
Q209 Switching (Rec/play select)
Record bias(80kHz)
OSC
ERASE HEAD
B A
(BEAT PROOF)

Truth value table of tape select IC

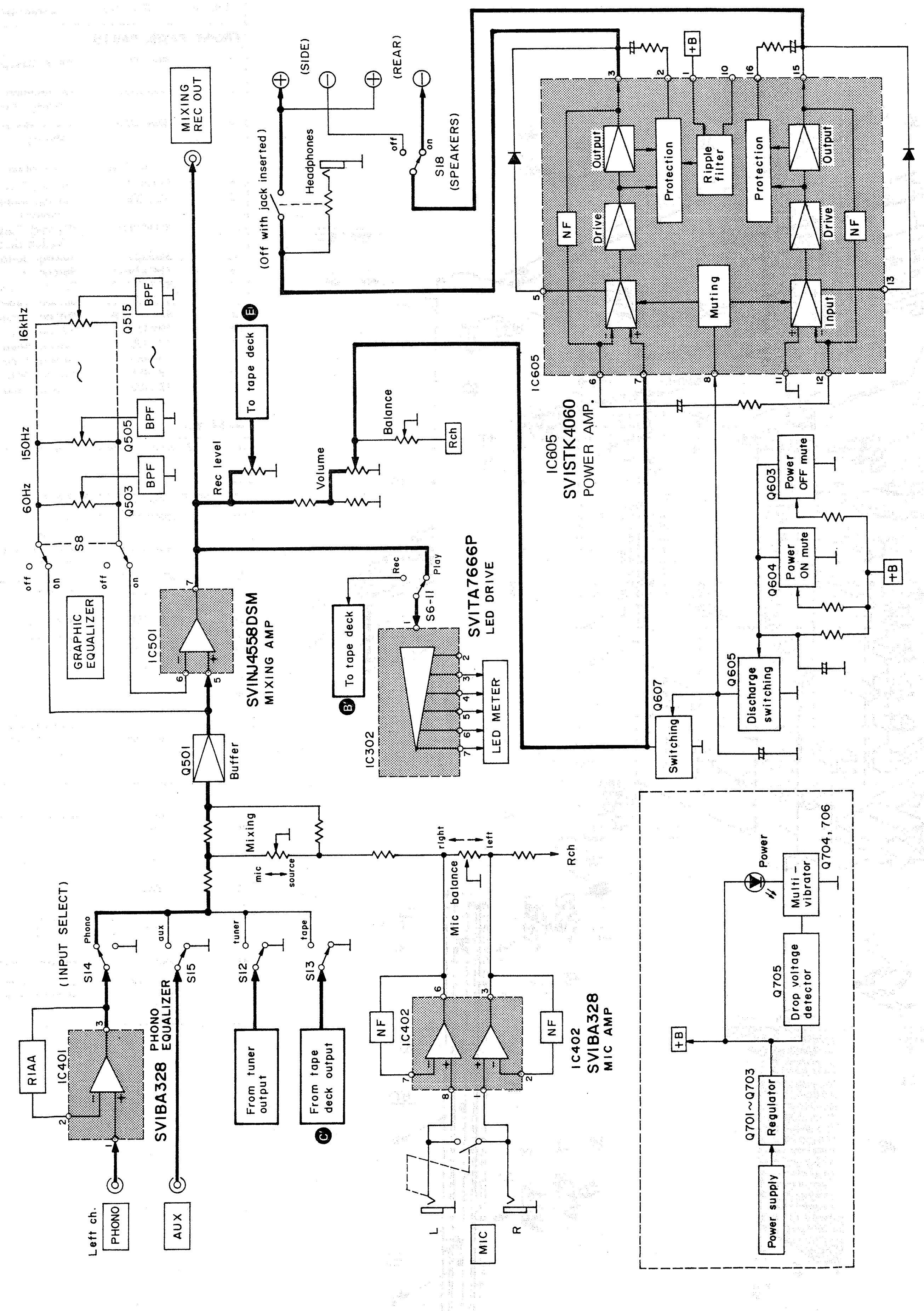
Tape	A	B	N1 ~ N3	N4 N5	C1 ~ C3	M1 ~ M3
Normal	L	L	L	H	H	H
	L	H	H	L	H	L
Cr O2	H	L	H	L	L	H
Metal	H	H	H	L	H	L

24

FM/MW/LW Circuitry


FM
AM
L1
FM RF Amp
Q1
Q3
MIX
Q2
OSC
D1
AFC
Ceramic filter
CFI01
IC101 AN278 FM IF AMP
IC102 AN7273 FM Det & AM converter
Ceramic filter
CFI02
CFI03
IFT
FM/AM IF Amp
FM Det
Mute Det
Level Det
Mute Level
AF Amp
AM RF Amp
MIX
OSC
AM Det
AGC
AM Vcc
GND
Detection coil
Vcc
MUTING
Q101
Q102
tuning
D106
S1
(FM MUTING)
off
on
MW/LW
FM
S2
(BAND SELECTOR)
Q103
From rec/play switch
(MW BAND SELECTOR)
S3
S4
S5
L102 (MW/LW ant.coil)
L105 (LW EXT. ant.coil)
L101 (MW OSC coil)
L103 (LW OSC coil)
EXT
INT
(LW BAND SELECTOR)
(LW ANT SELECTOR)
FM circuit
AM circuit
(Power supply)
(FM BAND SELECTOR)
auto
mono
S1 (FM MODE)
IC103
SVIμPC1161C3 MPX.
AF Amp
MPX
Stereo Switch
Pilot Det
Phase Det
Stereo/Mono control
VCO 76kHz
DIV(1/2) 19kHz
DIV(1/2) 38kHz
De-emphasis
Output L
Output R
stereo
VR102(FM MPX V.C.O adj.)

Graphic Equalizer, Microphone Amplifier & Power Amplifier Circuitry


MIXING REC OUT
(SIDE)
(REAR)
Headphones
(Off with jack inserted)
S8 (SPEAKERS)
off
on
Output
Drive
NF
Protection
Ripple filter
Muting
Input
+B
IC605
SVISTK4060
POWER AMP.
Power OFF mute
Power ON mute
Q603
Q604
Q605
Q607
Discharge switching
Switching
+B
To tape deck
Rec level
Volume
Balance
Rch
Rec
Play
S6-II
SVITA7666P
LED DRIVE
IC302
LED METER
To tape deck
16kHz
150Hz
60Hz
BPF
Q515
Q505
Q503
S8
GRAPHIC EQUALIZER
IC501
SVINJ4558DSM
MIXING AMP
Q501
Buffer
Mixing
mic
source
Mic balance
right
left
Rch
(INPUT SELECT)
Phono
aux
tuner
tape
S14
S15
S12
S13
RIAA
IC401
SVIBA328
PHONO EQUALIZER
From tuner output
From tape deck output
NF
IC402
SVIBA328
MIC AMP
Left ch.
PHONO
AUX
MIC
L
R
Power
Multi-vibrator
Q704, 706
Q705
Drop voltage detector
Q701~Q703
Regulator
Power supply
+B

REPLACEMENT PARTS LIST

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice:
   Components identified by ⚠ mark have special characteristics important for safety.
   When replacing any of these components use only manufacturer's specified parts.
3. The "**S**" mark is service standard parts and may differ from production parts.
4. The parenthesized numbers in the column of description stand for the quantity per set.
5. Bracketed indications in Ref. No. columns specify the areas.Parts without these indications can be used for all areas.

Areas

- * [EK] is available in United Kingdom.
- * [EF] is available in France:
- * [PC] is available in European Audio Club.

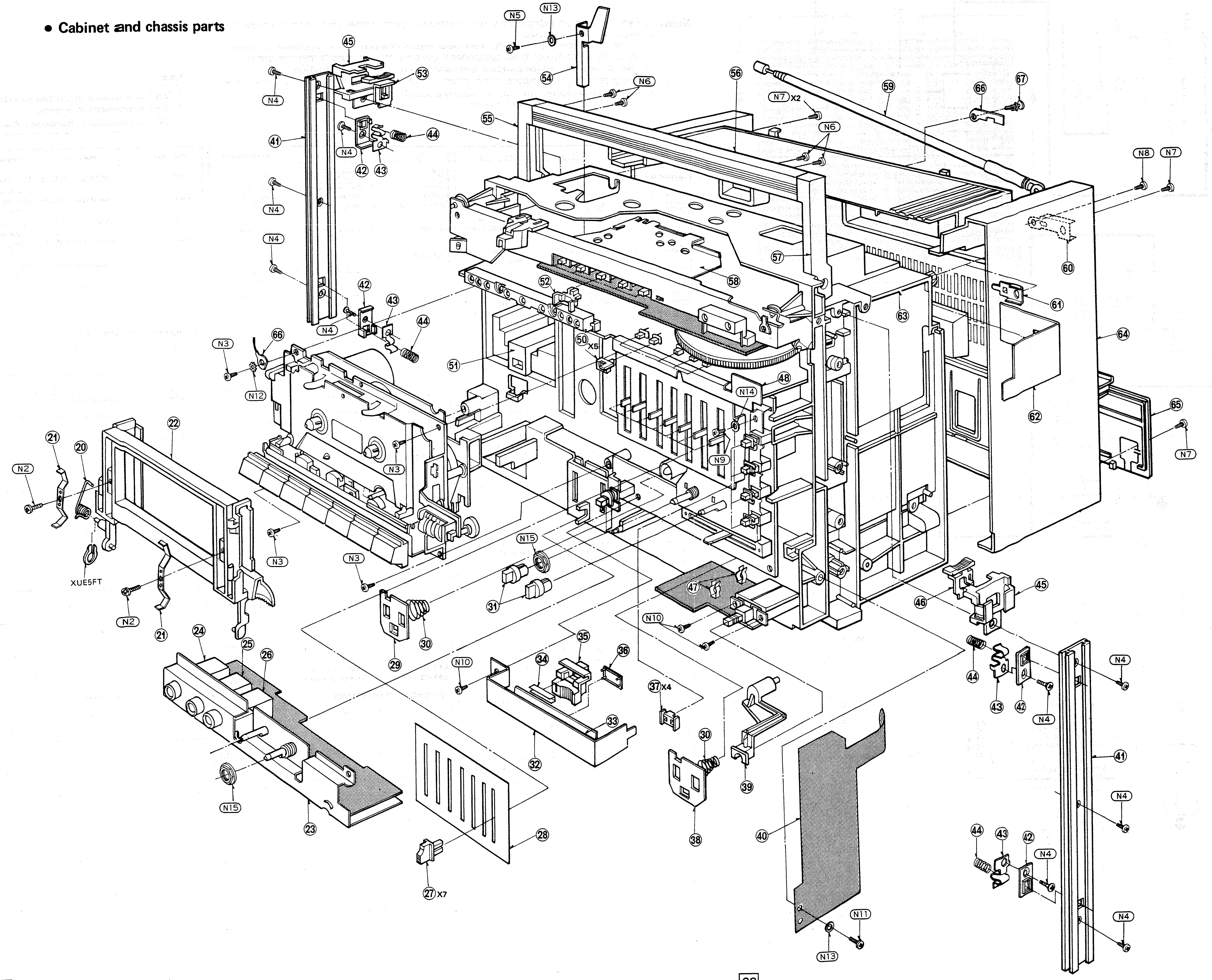
Ref. No.	Part No.	Description
INTEGRATED CIRCUITS		
IC61 (×2)	SVINE646N	Dolby
IC101	AN278	FM IF Amplifier
IC102	AN7273	FM IF Amp. & Det. AM Conv.
IC103	SVIUPC1161C3	FM MPX
IC201, 401, 402	SVIBA328MR	Playback, Phono, Mic Amp.
IC202	AN6256	Tape Select
IC301	SVIBA338	Auto Stop
IC302	SVITA7666P	LED Meter Amp
IC501	SVINJ4558DSM	Mixing
IC605, 606	SVISTK4060	Power Amplifier
TRANSISTORS		
Q1	2SK195—H1	FM RF Amplifier
Q2 **S**	2SC1675—L	FM OSC
Q3 **S**	2SC1674—M	FM MIX
Q101, 102 **S**	2SC828AQ	Signal Detector
Q103 **S**	2SC945—Q	Selection Muting
Q201~204, 303 703~706 **S**	2SC1685—Q	Play & Rec Mute, Switching, Multi-Vibrator
Q205, 206	2SC1815—Y	AF Amplifier
Q207, 208, 210 302	2SA1015—Y	Switching, Rec Bias OSC
Q209 **S**	2SC1318—R	Switching, Rec Mute
Q301	2SD788—D	Drive, Plunger
Q501~516	2SC1815—Y	Buffer & BPF
Q603	2SA1015—Y	Muting
Q604~607	2SC1815—Y	Muting
Q701	2SK34—D1	Regulator (FET)
Q702	2SD886—P	Regulator
DIODES		
D1 **S**	1S2687AA	AFC
D101	MA27W—A	FM Offset
D102	LN41YCPH	LED, Tuning
D103, 106, 201 301~305, 307, 308 **S**	MA162A	Switching
D104	LN21RP	LED, FM Stereo
D107 **S**	MA1051A	Zener, 5.1V
D108	SVDLB72UR5HL	LED, Dial Pointer
D311, 313, 314 321, 322	LN21RP	LED, Power & Level Meter
D312	LN21RP	LED, Recording
D315~320	LN31GCPHL	LED, Level Meter
D603~606 **S**	MA162A	Protection

Ref. No.	Part No.	Description
D705 **S**	RVDRD6R2EB	Zener, 6.2V
D706 **S**	SVDRD8.2EB	Zener, 8.2V
D707	SVDMZ305C	Zener, 5V
D711~718 ⚠ **S**	SVDS3V40	Rectifier
D1001 **S**	SVDSR1K2	Noise Killer
COILS		
L1	SLA4N37—Z	FMAntenna
L2	SLD4P75—P	FM RF Detector
L3	SLO4P115—P	FM Oscillator
L4	SLQY15G5—O	Choke
L5	RLQY25S5—O	Choke
L101	SLO2C1—P	MW Oscillator
L102	SLF6D11—O	MW/SW1 Antenna
L103	SLO1C13—P	SW1 Oscillator
L105	SLA1C7	SW2 Antenna
L201, 202	SLM1Z19—P	Low Pass Filter
L203, 204	SLQX302—1M	Choke
L205, 206	SLM1C59	Trap
L207	SLQX181—1D	Choke
TRANSFORMERS		
T1 ⚠	SLT4F9—H	Power Source
T101	SLI4C539—P	FM IFT
T102	SLI2C139—M	AM IFT
CERAMIC FILTERS		
CF101, 102	SVFE107MS2—A	FM 10.7 MHz, Red
	SVFE107MS2—B	FM 10.675 MHz, Blue
	SVFE107MS2—C	FM 10.725 MHz, Orange
	SVFE107MS2—D	FM 10.650 MHz, Black
	SVFE107MS2—E	FM 10.750 MHz, White
	(Use pair ranks as same as CF101 and CF102)	
CF103 [EF, PC]	SVFSFU450B3	AM 450kHz
CF103 [EK]	SVFSFU468B4	AM 468kHz
VARIABLE RESISTORS		
VR102 **S**	EVNM4AA00B14	VCO Adj., 10kΩ (B)
VR201, 202	EVN58AA00B32	Playback Gain Adj., 300Ω(B)
VR203, 204 **S**	EVTS0AA00B54	Rec. Current Adj. 50kΩ (B)
VR205, 206	EVN58AA00B15	Rec. Bias Adj., 100kΩ (B)

Ref. No.	Part No.	Description
VR401	EWCXWAF15G15	Mic Mixing, 100kΩ (G)
VR402	EWH5NAF15G15	Mic Balance, 100kΩ (G)
VR501	EVBP1HC15A15	Volume, 100kΩ (A)
VR502	EWHLYAF30G15	Balance, 100kΩ (G)
VR503	EWC6XAF20A24	Rec. Level, 20kΩ (A)
VR504~510	EVBK8HC20CA4	Graphic Egualiger
VARIABLE CAPACITORS		
CV1, 2, 101, 102 (C1, 2, 3, 4)	SVCCB42G916	Tuning, FM/AM
CT103, 105, 106	ECV1ZW20X53T	Trimmer
COMPONENT COMBINATIONS		
Z101, 102	EXRP181K273C	180pF, 27kΩ
Z201	SLOK9Z1—M	OSC Block
Z701, 702	SXRFS203ZSM	(0.01 μF) × 2
FUSES		
F1 ⚠	XBA2C10TRO	T1A, 250V
F2 ⚠	XBA2C05TRO	T500mA, 250V
F3 ⚠	XBA2C06TRO	T630mA, 250V
SWITCHES		
S1~5	ESB62686	FM Muting/Mode .Band Selector
S6	ESD81620	Record/Playback
S7~11	ESB62653	Dolby NR, Graphic Equalizer Tape Selector
S12~15	ESB63159	Input Selector
S16	ESB63172	Rec Mute
S17	SSS67	Beat Proof
S18	SSS49	Speaker Selector
S19 ⚠	SSH1071	Power Switch
S20 ⚠	SSE37	Second Power
S21 ⚠	ESE37200	Voltage Selector
S22	QSB0253	Play/Rec. (Cassette)
S23, 24	QSB0251	FF/Rew, Stop (Cassette)

■ EXPLODED VIEWS

- **Cabinet and chassis parts**


N5
N13
54
45
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N4
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N6
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N7 X2
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N6
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N4
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N8
N7
N4
N4
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N4
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N3
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50 X5
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N12
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N14
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N9
N7
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N2
N3
N3
N15
XUE5FT
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46
N2
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N10
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N10
34
36
44
N4
33
37 X4
43
42
N4
30
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41
N15
23
28
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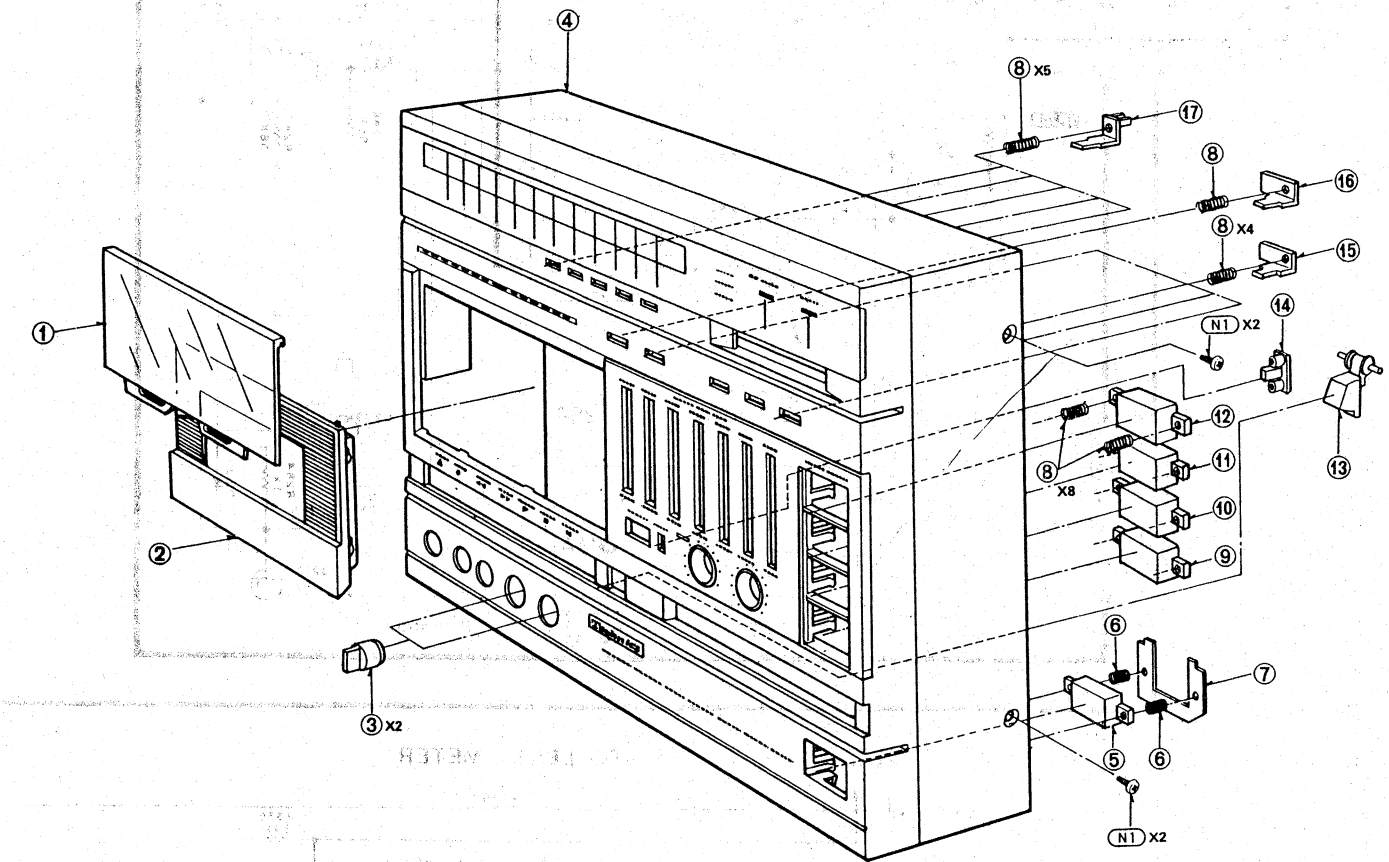
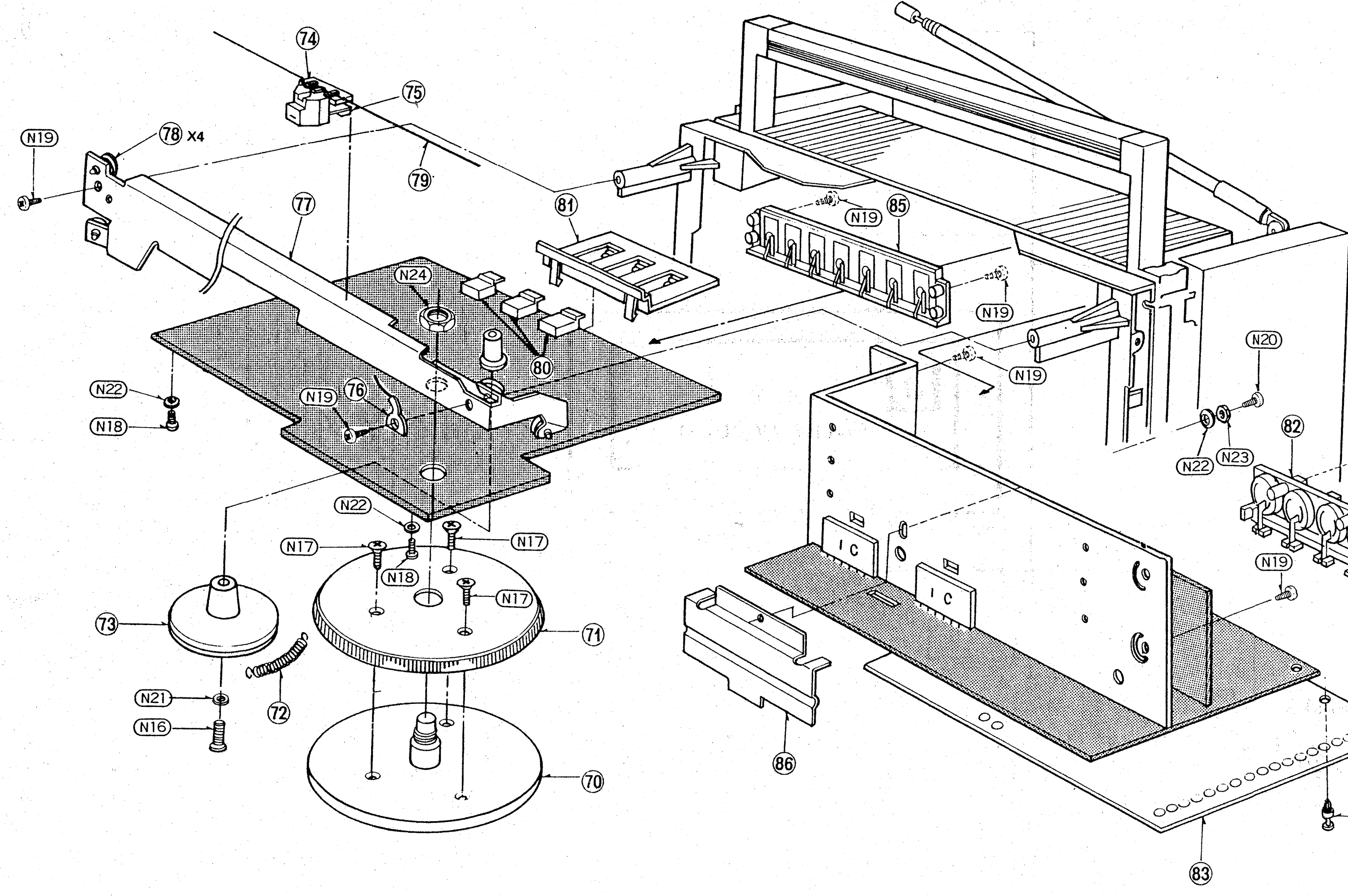
38
44
43
42
N4
N4
27 X7
N11
N13
N4

Ref. No.	Part No.	Description & Pcs
FRONT PANEL PARTS		
1	SGU287	Plate, Cassette Holder (1)
2	SGX7331	Escutcheon, Cassette Holder Plate (1)
3	SBN1085—1	Knob, Mic Balance/ Mixing (2)
4	SGWAC05LF	Front Panel Ass y (1)
5	SBC477	Button, Power Switch (1)
6	SUS209	Spring, Button (Power) (2)
7	SUW1923	Bracket, Power Switch Button (1)
8	SUS257	Spring, Button (18)
9	SBC479—11	Button, Aux (1)
10	SBC479—8	Button, Phono (1)
11	SBC479—10	Button, Tape (1)
12	SBC479—9	Button, Tuner (1)
13	SBC487	Button, Rec Mute (1)
14	SBC485	Button, Reset (1)
15	SBC483	Button, Tape Selector (4)
16	SBC483—1	Button, Dolby NR (1)
17	SBC485	Button, Band Selector (5)
SCREWS		
N1 S	XTB3+10BFN	Tapping, ⊕3×10 (4)
CABINET and CHASSIS PARTS		
20	QBN1749	Spring, Cassette Tape Holder (1)
21	QBP1923A	Spring, Cassette Tape Holder (2)
22	QKF2092K	Holder, Cassette Tape (1)
23	SMC987	Bracket (1)
24	SJJ71EG	Jack, Headphone (1)
25	SJJ71FG	Jack, Mic (Left/Mono) (1)
26	SJJ71DG	Jack, Mic (Right) (1)
27	SBD55	Knob, Graphic Equalizer (7)
28	SHS2479	Spacer (1)
29	SJB5005	Terminal, Battery (1)
30	SJC901	Spring, Battery (2)
31	SBN1085—1	Knob, Rec Level and Balance (2)
32	SGX7341	Guide, Volume Knob (1)
33	SMX611	Spacer, Volume Slider (1)
34	SHR5189	Spacer, Volume Knob (1)
35	SBD53	Knob, Volume (1)
36	SHR9607	Cover, Volume Knob (1)
37	SUB123	Holder, Input Selector Switch (4)
38	SJB5007	Terminal, Battery (1)
39	SUB119	Connection Rod, Power Switch (1)
40	SMC6189—1	Shield Cover (1)
41	SKE71	Bracket, Speaker (2)
42	SMX593—1	Spacer, Terminal (4)
43	SJT101—2	Terminal, Speaker (4)
44	SUS277	Spring (4)

- **Front panel parts**



- **Dial and terminal parts**



Ref. No.	Part No.	Description & Pcs
45	SKE73	Bracket, Stopper (2)
46	SGX7359	Stopper, Right Side (1)
47	SJT347	Holder, Fuse (2)
48	SMC989	Bracket, Control Volume (1)
49	SMX659	Insulation Plate (1)
50	SUB125	Holder, Tape Selector (5)
51	SUB103	Connection Rod, Rec Lever (1)
52	SUB127	Holder, Band Selector (5)
53	SGX7361	Stopper, Left Side (1)
54	SUB101	Lever, Rec (1)
55	SKH147–1	Handle, Left Side (1)
56	SKX277–3	Handle (Silver) (1)
57	SKH147	Handle, Right Side (1)
58	SHR5183	Insulation Plate (1)
59	XEASCR186FAY	Antenna (Telescopic Antenna) (1)
60	SJT99	Terminal, Antenna (1)
61	SJT85	Terminal, Antenna (1)
62	SMC6191–1	Shield Cover (1)
63	SUAAC05LF	Cabinet Body (Silver) (1)
64	SKMAC05SX	Cabinet, Rear (Silver) (1)

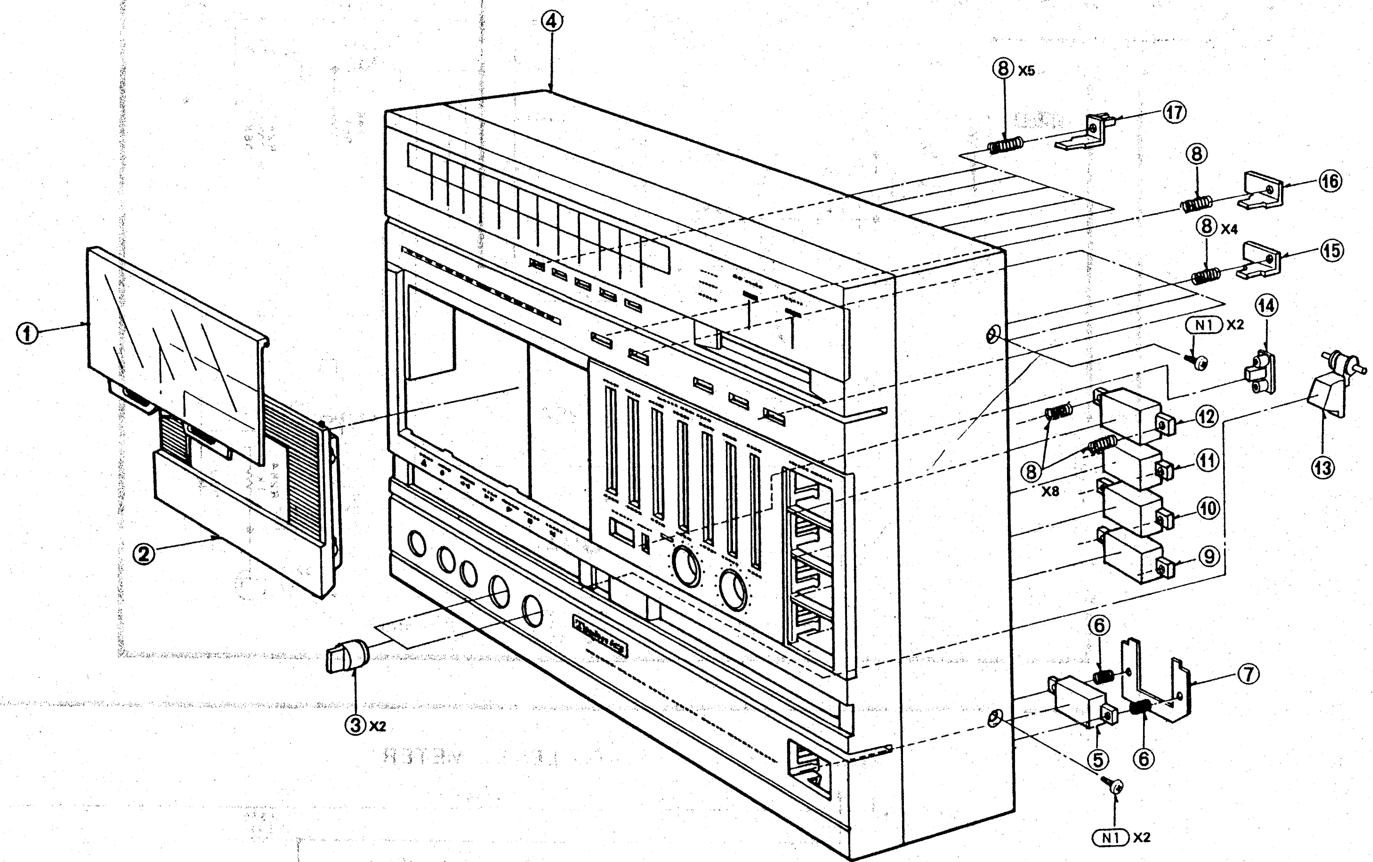
Ref. No.	Part No.	Description & Pcs
65	SJB9007–1	Battery Cover (1)
66	SHR5179	Stopper, Speaker Selector Switch (1)
67	SHR401–1	Lock Pin, Stopper (1)

Ref.No.	Part No.	Description & Pcs
SCREWS		
N2 S	XTN26+6BFZ	Tapping, ⊕2.6×6 (2)
N3 S	XTV3+10BFN	Tapping, ⊕3×10 (4)
N4 S	XTS3+8BFZ	Tapping, ⊕3×8 (10)
N5 S	XTN3+8B	Tapping, ⊕3×10 (1)
N6 S	XTB3+10BFN	Tapping, ⊕3×10 (4)
N7 S	XTB3+14BFN	Tapping, ⊕3×14 (4)
N8 S	XSB3+14FZS	⊕3×14 (1)
N9 S	XSN3+6S	⊕3×6 (1)
N10 S	XTV3+10BFN	Tapping, ⊕3×10 (3)
N11 S	XTB3+10BFN	Tapping, ⊕3×10 (1)
WASHERS		
N12 S	XWC3B	External Toothed Lock (1) ϕ3
N13 S	XWG3FN	Plain, ϕ3 (2)
N14 S	XWA3B	Spring, ϕ3 (1)
NUT		
N15	SNE4021	(2)

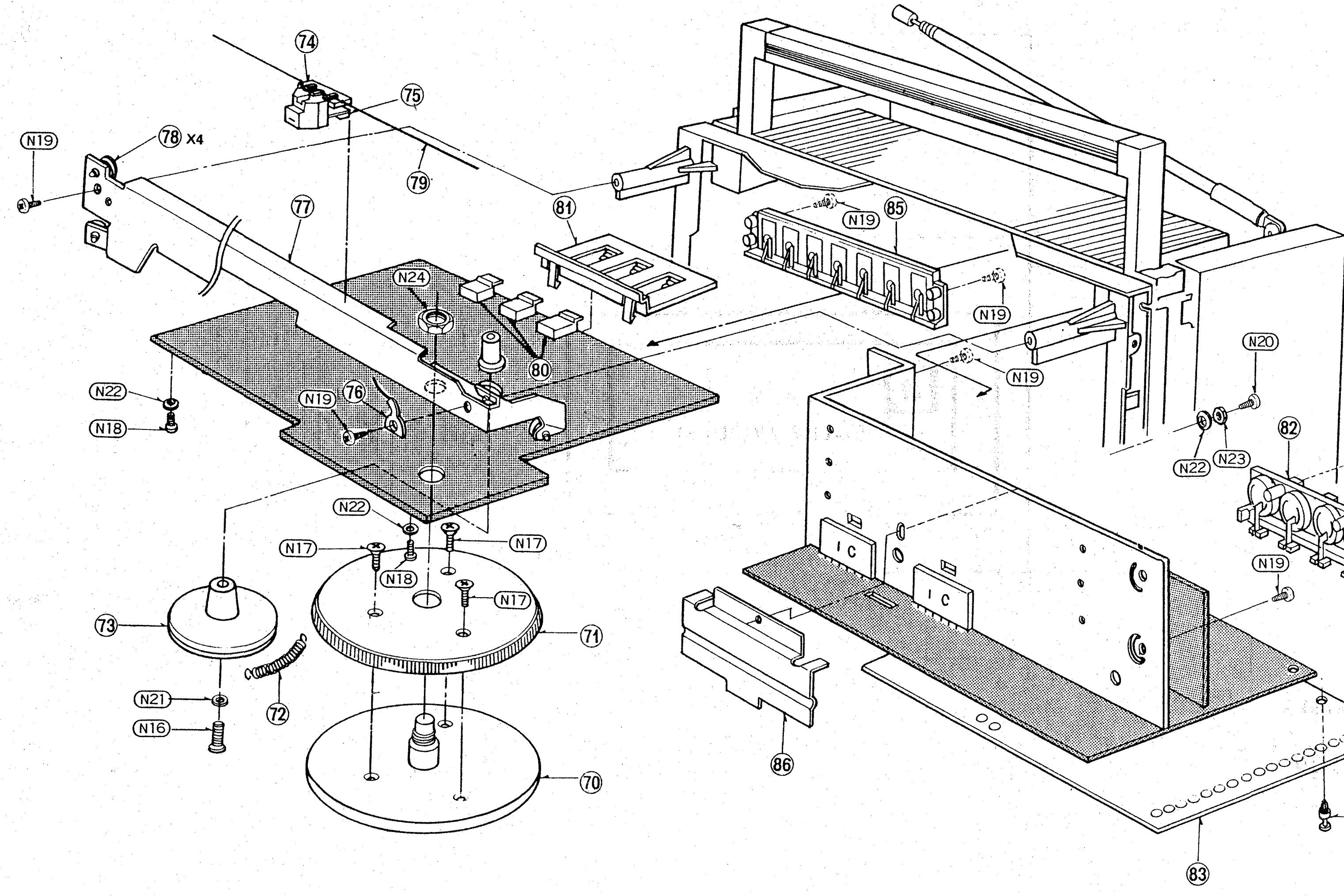
Ref. No.	Part No.	Description & Pcs
DIAL and TERMINAL PARTS		
70	SDT8097–1	Flywheel (1)
71	SBN1123	Knob, Flywheel (1)
72	SDSA4121	Spring (1)
73	SDD31–1	Drum (1)
74	SDP5087	Pointer, Dial (1)
75	SHP31–2	Spacer, Dial Pointer (1)
76	SJT231	Terminal (1)
77	SUG77	Guide, Pointer (1)
78	SDR33	Roller, Dial (4)
79	SDZ051–2	Cord, Dial (150cm)
80	SJF9101	Terminal, Antenna (3)
81	SGX7339	Ornament, Terminal Board (1)
82	SJF4433	Terminal Board, Speaker (1)
83	SMX631	Insulation Plate (1)
84	SHR401–1	Lock Pin, Insulation Plate (1)
85	SJF8701N	Terminal Board (1)
86	SMN1829	Bracket, Power IC (1)

Ref. No	Part No.	Description & Pcs
SCREWS		
N16 S	XSN26+5	⊕2.6×5 (1)
N17 S	XSS3+6BNS	⊕3×6 (3)
N18 S	XTN3+8B	Tapping, ⊕3×8 (2)
N19 S	XTB3+10BFN	Tapping, ⊕3×10 (8)
N20 S	XSN3+10S	⊕3×10 (1)
WASHERS		
N21 S	XWA26B	Spring, ϕ2.6 (1)
N22 S	XWG3	Plain, ϕ3 (3)
N23 S	XWA3B	Spring, ϕ3 (1)
NUT		
N24 S	XNS11	ϕ11 (1)

- **Front panel parts**



- **Dial and terminal parts**

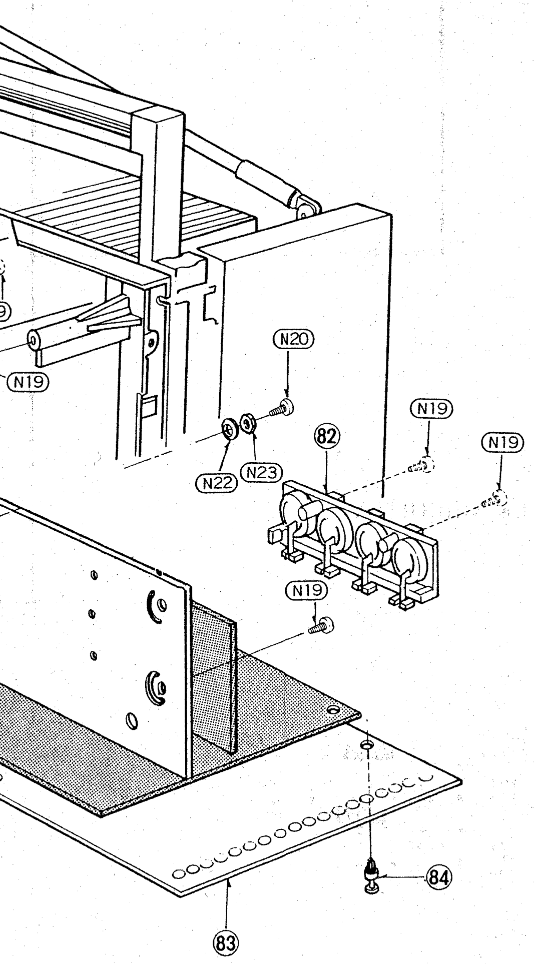


Ref. No.	Part No.	Description & Pcs
45	SKE73	Bracket. Stopper (2)
46	SGX7359	Stopper, Right Side (1)
47	SJT347	Holder, Fuse (2)
48	SMC989	Bracket, Control Volume (1)
49	SMX659	Insulation Plate (1)
50	SUB125	Holder, Tape Selector (5)
51	SUB103	Connection Rod, Rec Lever (1)
52	SUB127	Holder, Band Selector (5)
53	SGX7361	Stopper, Left Side (1)
54	SUB101	Lever, Rec (1)
55	SKH147—1	Handle, Left Side (1)
56	SKX277—3	Handle (Silver) (1)
57	SKH147	Handle, Right Side (1)
58	SHR5183	Insulation Plate (1)
59	XEASCR186FAY	Antenna (Telescopic Antenna) (1)
60	SJT99	Terminal, Antenna (1)
61	SJT85	Terminal, Antenna (1)
62	SMC6191—1	Shield Cover (1)
63	SUAAC05LF	Cabinet Body (Silver) (1)
64	SKMAC05SX	Cabinet, Rear (Silver) (1)
65	SJB9007—1	Battery Cover (1)
66	SHR5179	Stopper, Speaker Selector Switch (1)
67	SHR401—1	Lock Pin, Stopper (1)

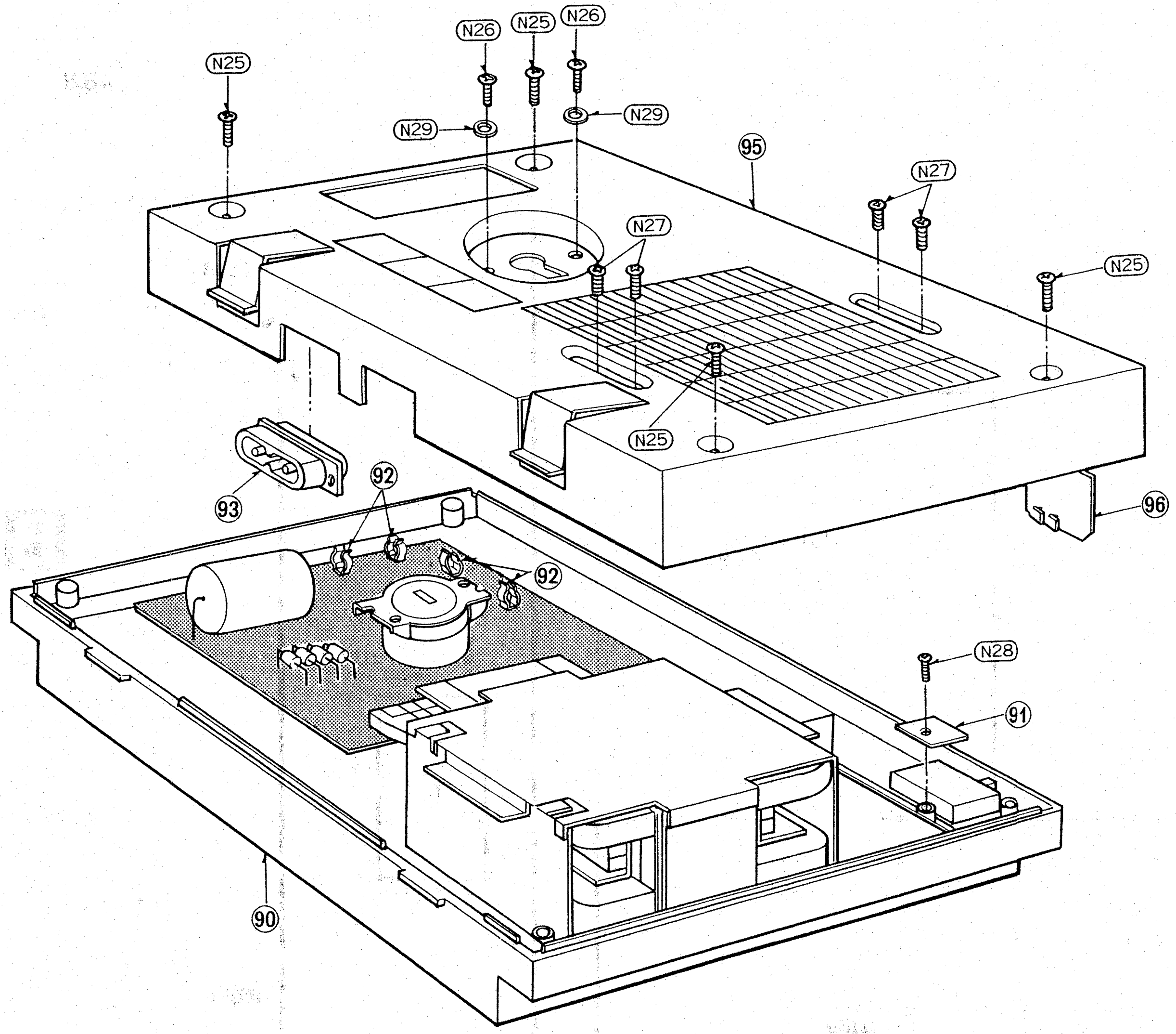
Ref.No.		Part No.	Description & Pcs
SCREWS			
N2	S	XTN26+6BFZ	Tapping, ⊕2.6×6 (2)
N3	S	XTV3+10BFN	Tapping, ⊕3×10 (4)
N4	S	XTS3+8BFZ	Tapping, ⊕3×8 (10)
N5	S	XTN3+8B	Tapping, ⊕3×10 (1)
N6	S	XTB3+10BFN	Tapping, ⊕3×10 (4)
N7	S	XTB3+14BFN	Tapping, ⊕3×14 (4)
N8	S	XSB3+14FZS	⊕3×14 (1)
N9	S	XSN3+6S	⊕3×6 (1)
N10	S	XTV3+10BFN	Tapping, ⊕3×10 (3)
N11	S	XTB3+10BFN	Tapping, ⊕3×10 (1)
WASHERS			
N12	S	XWC3B	External Toothed Lock ϕ3 (1)
N13	S	XWG3FN	Plain, ϕ3 (2)
N14	S	XWA3B	Spring, ϕ3 (1)
NUT			
N15		SNE4021	(2)

Ref. No.	Part No.	Description & Pcs
DIAL and TERMINAL PARTS		
70	SDT8097—1	Flywheel (1)
71	SBN1123	Knob, Flywheel (1)
72	SDSA4121	Spring (1)
73	SDD31—1	Drum (1)
74	SDP5087	Pointer, Dial (1)
75	SHP31—2	Spacer, Dial Pointer (1)
76	SJT231	Terminal (1)
77	SUG77	Guide, Pointer (1)
78	SDR33	Roller, Dial (4)
79	SDZ051—2	Cord, Dial (150cm)
80	SJF9101	Terminal, Antenna (3)
81	SGX7339	Ornament, Terminal Board (1)
82	SJF4433	Terminal Board, Speaker (1)
83	SMX631	Insulation Plate (1)
84	SHR401—1	Lock Pin, Insulation Plate (1)
85	SJF8701N	Terminal Board (1)
86	SMN1829	Bracket, Power IC (1)

Ref. No		Part No.	Description & Pcs
SCREWS			
N16	S	XSN26+5	⊕2.6×5 (1)
N17	S	XSS3+6BNS	⊕3×6 (3)
N18	S	XTN3+8B	Tapping, ⊕3×8 (2)
N19	S	XTB3+10BFN	Tapping, ⊕3×10 (8)
N20	S	XSN3+10S	⊕3×10 (1)
WASHERS			
N21	S	XWA26B	Spring, ϕ2.6 (1)
N22	S	XWG3	Plain, ϕ3 (3)
N23	S	XWA3B	Spring, ϕ3 (1)
NUT			
N24	S	XNS11	ϕ11 (1)


N19
N20
N22
N23
82
N19
N19
N19
84
83

- **Power source adaptor parts**


N26
N25
N26
N25
N29
N29
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N27
N27
N25
N25
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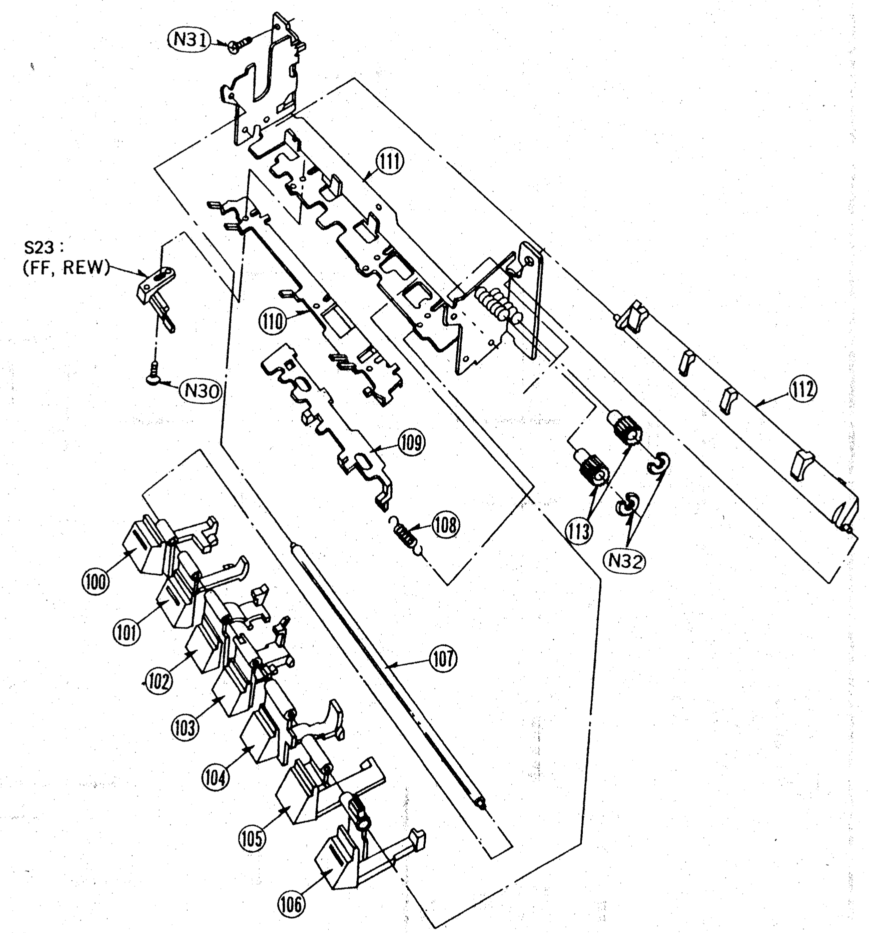
92
96
N28
91
90

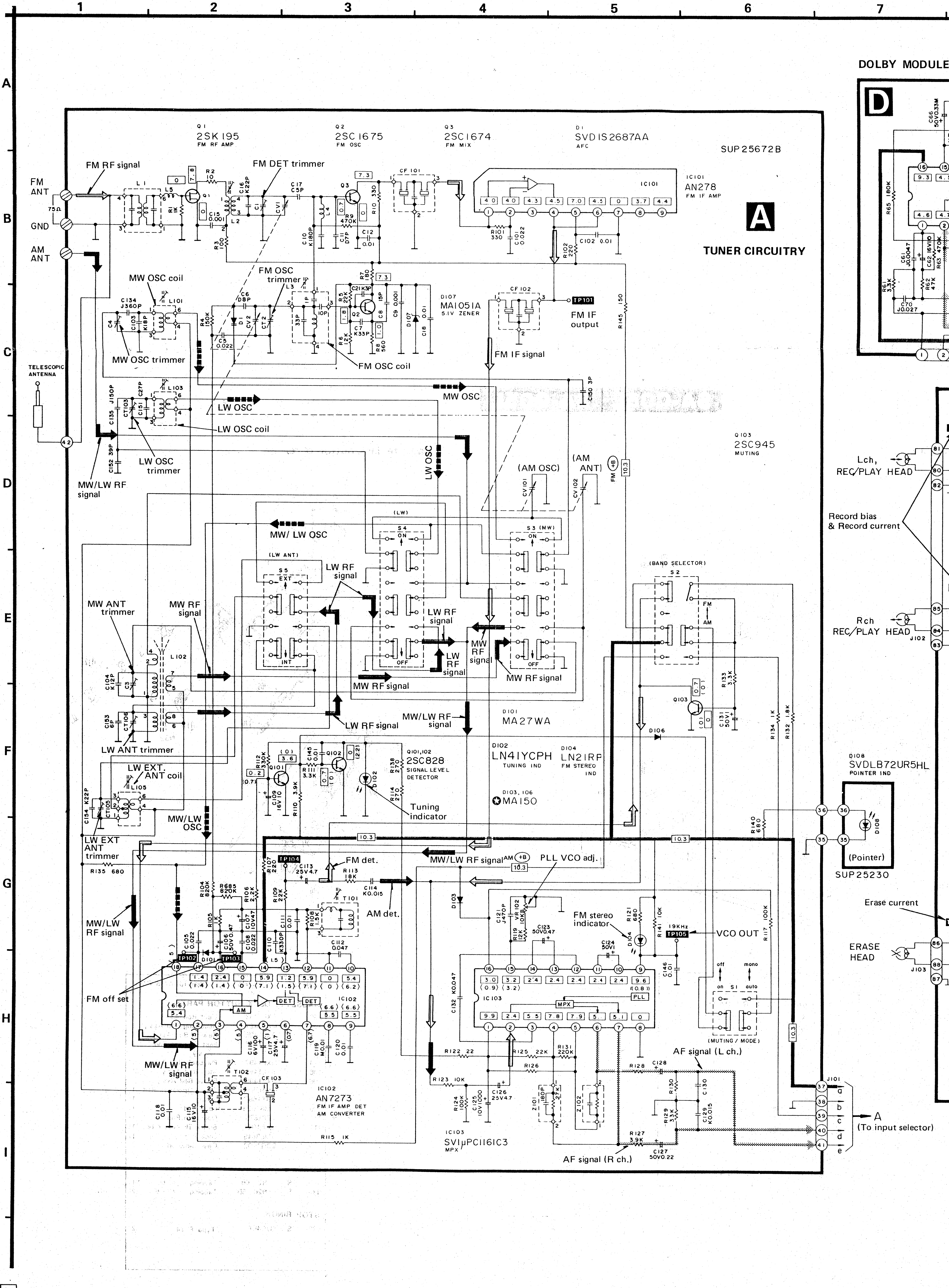
Ref. No.	Part No.	Description & Pcs
POWER SOURCE ADAPTOR PARTS		
90	SKM2410—1U	Top Cover (1)
91	SMN1825	Bracket (1)
92	SJT347	Holder, Fuse (4)
93	SFDJHSC0492	Socket (1)
95	SKMAC05E1	Bottom Cover Ass'y (1)
96	SJC11	Terminal Plate (2)
SCREWS		
N25 S	XTN3+10BFZ	Tapping, ⊕3×10 (4)
N26 S	XSN3+8BVS	⊕3×8 (2)
N27 S	XTB4+10BFZ	Tapping, ⊕4×10 (4)
N28 S	XTV3+8BFZ	Tapping, ⊕3×8 (1)
WASHERS		
N29 S	XWA3BFZ	Spring, ϕ3 (2)

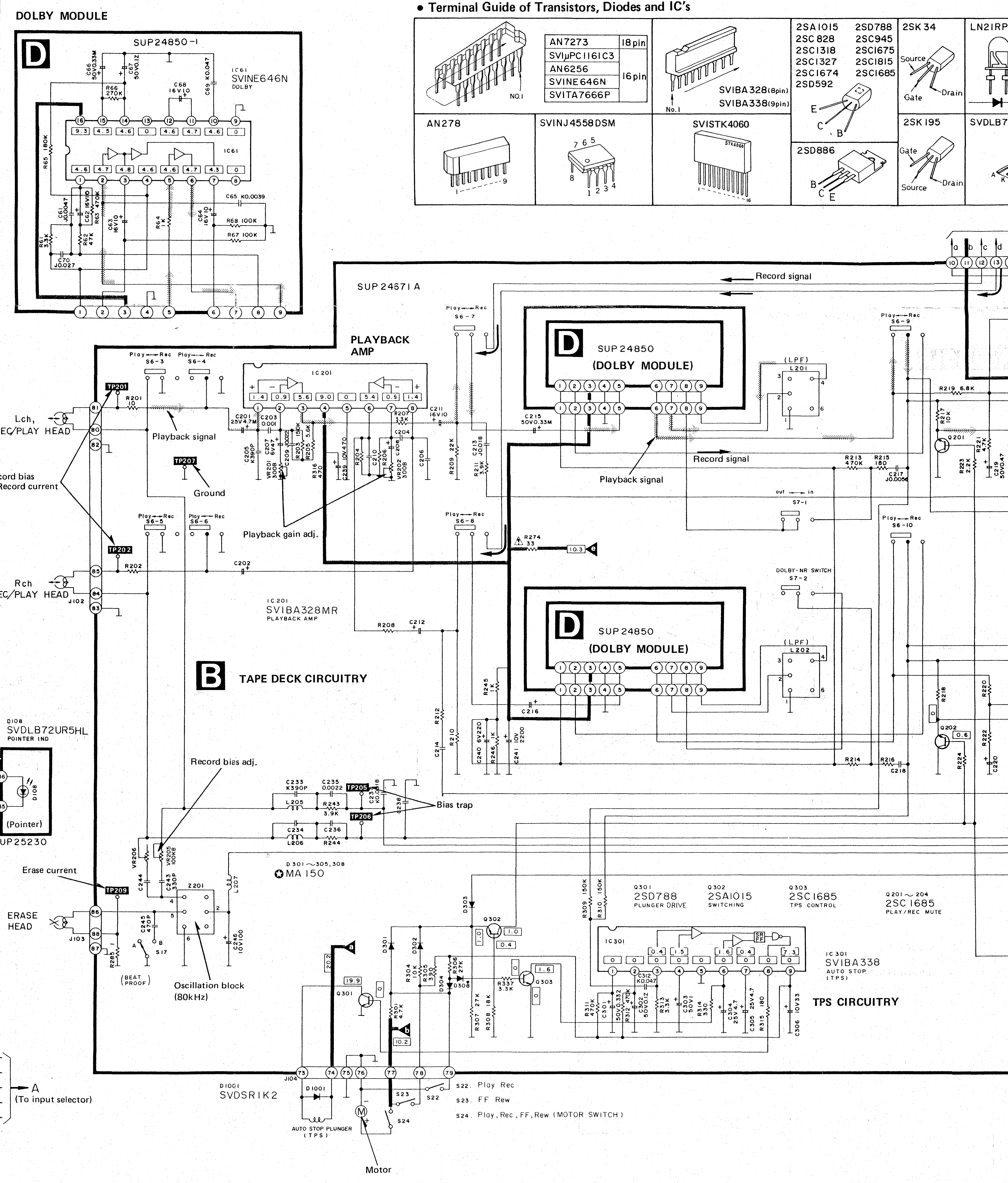
- **Cassette deck button parts**


N31
111
S23 :
(FF, REW)
110
N30
112
109
108
113
N32
100
101
102
103
107
104
105
106

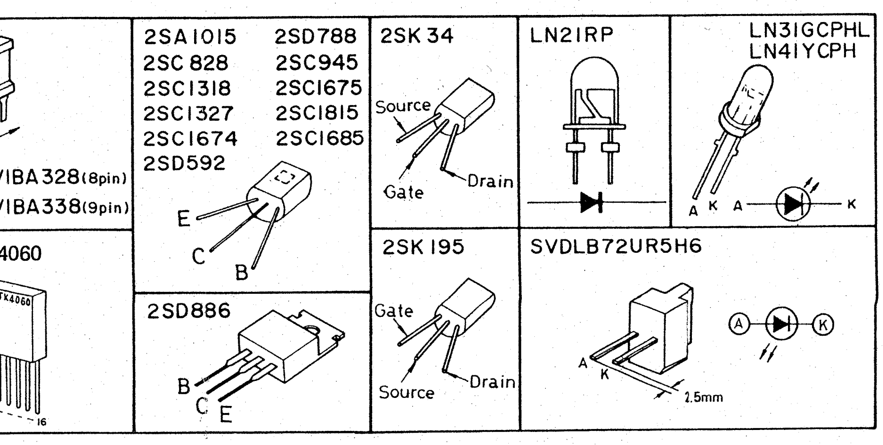
Ref. No.	Part No.	Description & Pcs
CASSETTE DECK BUTTON PARTS		
100	QXL1493	Eject Rod Ass'y (1)
101	QXL1494	Recording Rod Ass'y (1)
102	QXL1495	Rewind Rod Ass'y (1)
103	QXL1496	Fast Forward Rod Ass'y (1)
104	QXL1497	Playback Rod Ass'y (1)
105	QXL1498	Stop Rod Ass'y (1)
106	QXL1499	Pause Rod Ass'y (1)
107	QMN2554	Shaft, Operation Rod (1)
108	QBT1597	Spring (1)
109	QMR1823	Lock Rod (1)
110	QBP1875	Operation Rod (1)
111	QXA1044	Button Bracket Ass'y (1)
112	QML3649	Lock Arm (1)
113	QDG1102	Gear, Slow up (2)
SCREWS		
N30 S	XTN2+6B	Tapping, ⊕2×6 (1)
N31 S	XTN26+6B	Tapping, ⊕2.6×6 (2)
STOP RINGS		
N32 S	XUC4FT	Type E ϕ4 (2)

■ SCHEMATIC DIAGRAM -- Ⓐ (FM/MW/LW Tuner & Cassette Deck Circuitry)


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
DOLBY MODULE
D
Q1
2SK195
FM RF AMP
Q2
2SC1675
FM OSC
Q3
2SC1674
FM MIX
D1
SVDIS2687AA
AFC
SUP25672B
FM RF signal
FM DET trimmer
FM ANT
75Ω
GND
AM ANT
IC101
AN278
FM IF AMP
A
TUNER CIRCUITRY
MW OSC coil
FM OSC trimmer
MW OSC trimmer
FM OSC coil
D107
MA1051A
5.1V ZENER
TP101
FM IF output
FM IF signal
TELESCOPIC ANTENNA
MW OSC
LW OSC
LW OSC coil
LW OSC trimmer
MW/LW RF signal
LW OSC
(AM OSC)
(AM ANT)
FM
Q103
2SC945
MUTING
Lch, REC/PLAY HEAD
Record bias & Record current
Rch REC/PLAY HEAD
J102
MW/ LW OSC
(LW)
S4
(LW ANT)
S5
EXT
INT
LW RF signal
S3 (MW)
ON
OFF
(BAND SELECTOR)
S2
FM
AM
MW ANT trimmer
MW RF signal
LW RF signal
MW RF signal
MW RF signal
MW RF signal
LW ANT trimmer
LW RF signal
MW/LW RF signal
D101
MA27WA
D102
LN41YCPH
TUNING IND
D104
LN21RP
FM STEREO IND
D103, 106
✪MA150
Q101,102
2SC828
SIGNAL LEVEL DETECTOR
Tuning indicator
LW EXT. ANT coil
L105
MW/LW OSC
LW EXT ANT trimmer
D106
D108
SVDLB72UR5HL
POINTER IND
(Pointer)
SUP25230
Erase current
ERASE HEAD
J103
TP104
FM det.
AM det.
MW/LW RF signal
PLL VCO adj.
FM stereo indicator
19KHz
TP105
VCO OUT
off
mono
on S1 auto
(MUTING / MODE)
MW/LW RF signal
TP102
TP103
FM off set
AM
DET
DET
MPX
PLL
IC102
IC103
T101
T102
CF103
IC102
AN7273
FM IF AMP DET
AM CONVERTER
IC103
SVIμPC1161C3
MPX
AF signal (L ch.)
AF signal (R ch.)
J101
a
b
c
d
e
A
(To input selector)
10.3


DOLBY MODULE
D
SUP24850-1
IC61
SVINE646N
DOLBY
C66 50V0.33M
C67 50V0.1Z
C68 16V10
C69 K0.047
R66 270K
R65 180K
C61 J0.0047
C62 16V10
R63 470K
C63 16V10
R64 1K
C64 16V10
C65 K0.0039
R68 100K
R67 100K
R61 3.3K
R62 47K
C70 J0.027
• Terminal Guide of Transistors, Diodes and IC's
AN7273 18pin
SVIμPC1161C3
AN6256
SVINE646N 16pin
SVITA7666P
NO.1
SVIBA328(8pin)
SVIBA338(9pin)
No.1
2SA1015
2SC828
2SC1318
2SC1327
2SC1674
2SD592
2SD788
2SC945
2SC1675
2SC1815
2SC1685
E
C
B
2SK34
Source
Gate
Drain
LN21RP
AN278
SVINJ4558DSM
SVISTK4060
2SD886
2SK195
SVDLB7
SUP 24671 A
Record signal
PLAYBACK AMP
Play—Rec S6-3
Play—Rec S6-4
Play—Rec S6-7
Play—Rec S6-9
TP201
Lch, REC/PLAY HEAD
R201 10
IC201
C201 25V4.7M
C203 0.001
C205 K390P
C207 6V47
C209
VR201 300B
R203 150K
R205 5.6K
R316 470
C239 10V470
R204
C210
R206
C208
VR202 300B
R207 3.3K
C204
C206
C211 16V10
R209 22K
R211 3.9K
C213 J0.018
C215 50V0.33M
D
SUP24850
(DOLBY MODULE)
(LPF)
L201
R219 6.8K
R217 10K
Q201
R221 4.7K
R223 2.2K
C219 50V0.47
Playback signal
Ground
TP207
Record signal
R213 470K
R215 180
C217 J0.0056
Playback signal
out — in S7-1
Play—Rec S6-5
Play—Rec S6-6
Play—Rec S6-8
Play—Rec S6-10
record bias
Record current
Playback gain adj.
TP202
R274 33
10.3
e
R202
C202
Rch REC/PLAY HEAD
J102
DOLBY-NR SWITCH S7-2
IC201
SVIBA328MR
PLAYBACK AMP
R208
C212
B
TAPE DECK CIRCUITRY
D
SUP24850
(DOLBY MODULE)
(LPF)
L202
R245 1K
C216
R212
R210
C214
C240 6V220
R246 1K
C241 10V 2200
R218
R220
Q202
0.6
R222
R224
C220
R214
R216
C218
D108
SVDLB72UR5HL
POINTER IND
D108
(Pointer)
SUP25230
Record bias adj.
C233 K390P
C235 0.0022
TP205
C237 K0.018
C238
Bias trap
L205
R243 3.9K
TP206
C234
C236
L206
R244
VR206
VR205 100KB
C244
C243 330P
Erase current
TP209
D301~305,308
MA150
L207
Z201
ERASE HEAD
J103
C245 470P
C246 10V100
R228
S17
(BEAT PROOF)
Oscillation block (80kHz)
D303
Q302
1.0
0.4
R309 150K
R310 150K
Q301 2SD788 PLUNGER DRIVE
Q302 2SA1015 SWITCHING
Q303 2SC1685 TPS CONTROL
Q201~204 2SC1685 PLAY/REC MUTE
IC301
SR FF
IC301
SVIBA338
AUTO STOP (TPS)
a
20.2
19.9
D301
D302
R304 10K
R305 390
R306 27K
D304
D308
R337 3.3K
1.6
Q303
Q301
R301 4.7K
b
10.2
R307 27K
R308 18K
R311 470K
C301 50V0.332
R312 470K
C312 K0.047
C302 50V0.1Z
R313 3.3K
C303 50V1
R314 330
C304 25V4.7
C305 25V4.7
R315 180
C306 10V33
TPS CIRCUITRY
J104
A
(To input selector)
D1001
SVDSR1K2
D1001
AUTO STOP PLUNGER (TPS)
S23
S22
S24
M
Motor
S22. Play Rec
S23. FF Rew
S24. Play, Rec, FF, Rew (MOTOR SWITCH)

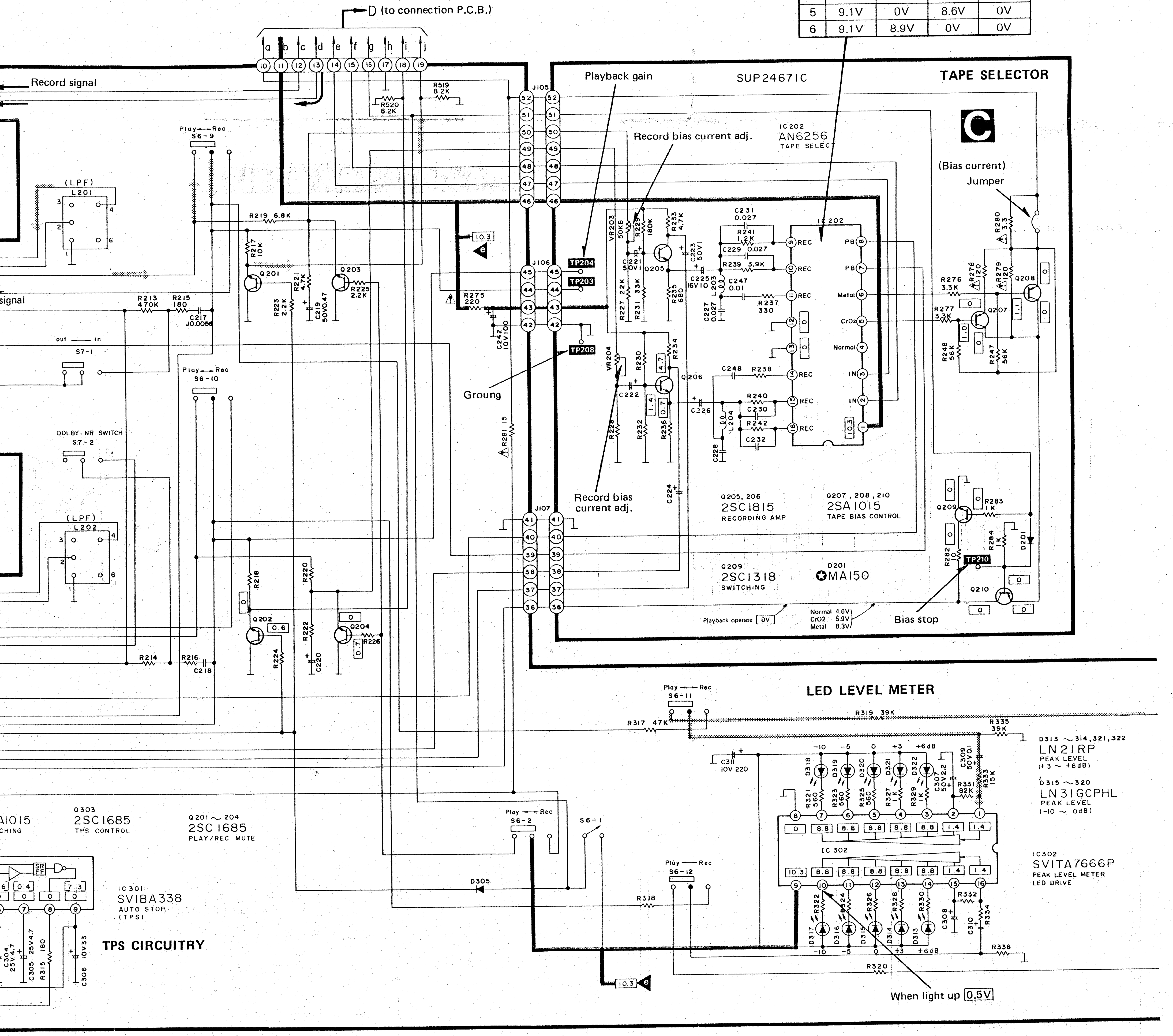
13 14 15 16 17 18 19



2SA1015
2SD788
2SC828
2SC945
2SC1318
2SC1675
2SC1327
2SC1815
2SC1674
2SC1685
2SD592
E
C
B
/IBA328(8pin)
/IBA338(9pin)
4060
2SD886
B
C
E
2SK34
Source
Gate
Drain
2SK195
Gate
Source
Drain
LN21RP
LN31GCPHL
LN41YCPH
A
K
A
K
SVDLB72UR5H6
A
K
A
K
2.5mm

IC202

Pin No.	Record operate			Playback operate
	Normal	CrO_2	Metal	
4	0V	0V	0V	0V
5	9.1V	0V	8.6V	0V
6	9.1V	8.9V	0V	0V

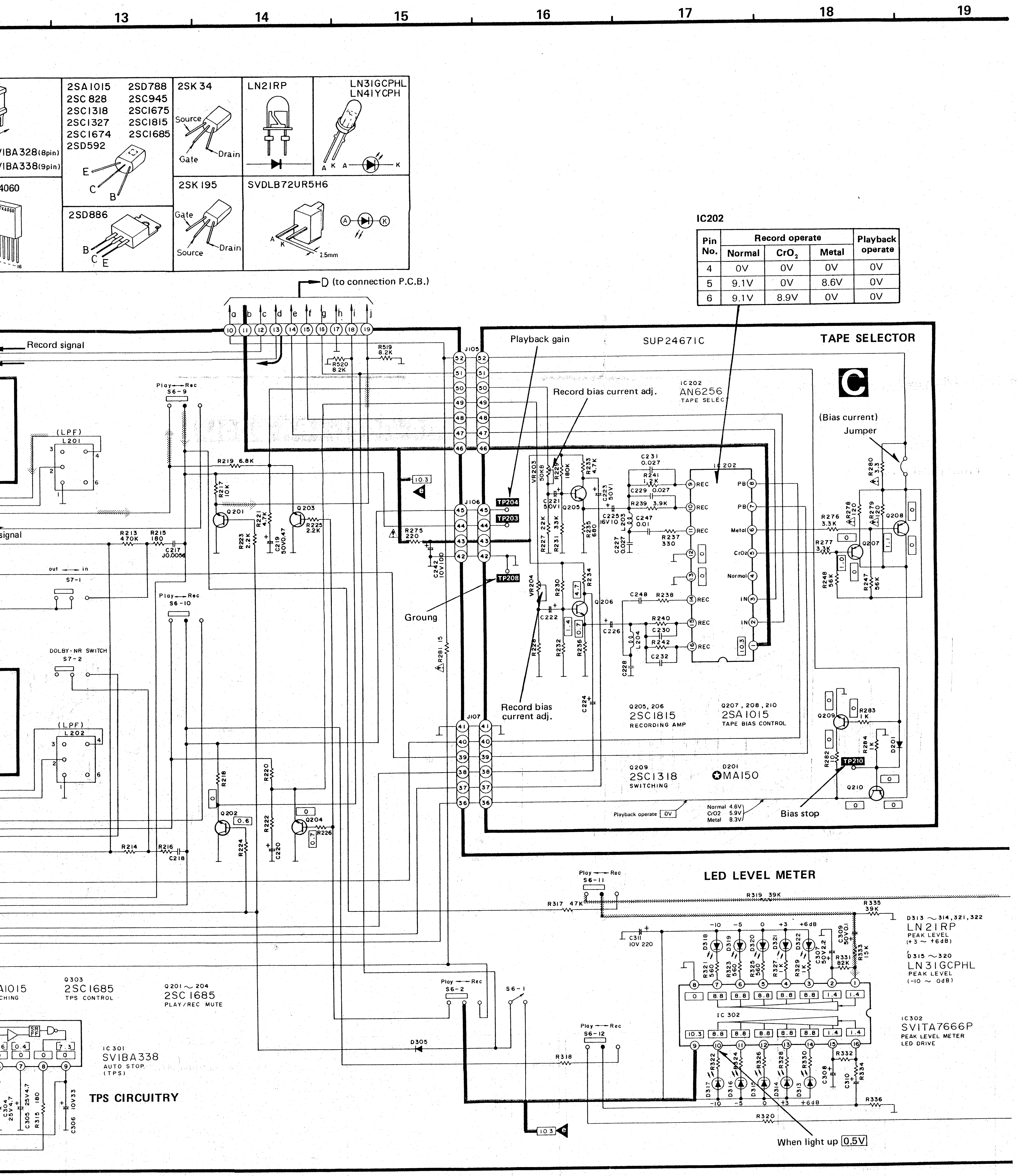


D (to connection P.C.B.)
a b c d e f g h i j
Record signal
signal
Play — Rec
S6-9
(LPF)
L201
(LPF)
L202
R219 6.8K
R217 10K
Q201
Q203
R221 4.7K
R225 2.2K
R223 2.2K
C219 50V0.47
R213 470K
R215 180
C217 50.0056
out — in
S7-1
Play — Rec
S6-10
DOLBY-NR SWITCH
S7-2
R218
R220
Q202
Q204
R222
R224
R226
C220
R214
R216
C218
R519 8.2K
R520 8.2K
J105
J106
J107
10.3
R275 220
C242 10V100
R281 15
Playback gain
SUP24671C
TAPE SELECTOR
C
IC202 AN6256 TAPE SELECT
Record bias current adj.
(Bias current) Jumper
TP204
TP203
TP208
Groung
VR203 50KB
R229 180K
R233 4.7K
C221 50V1
C223 50V1
Q205
C225 16V10
R227 2.2K
R231 33K
R235 680
C231 0.027
R241 1.2K
C229 0.027
R239 3.9K
C247 0.01
C227 0.027
L203
R237 330
IC202
REC
PB
Metal
CrO2
Normal
IN
VR204
R230
R234
Q206
C222
C248
R238
R240
C230
R242
C232
C226
L204
R228
R232
R236
C228
C224
Record bias current adj.
R260 3.3
R276 3.3K
R278 120
R279 120
Q208
R277 3.3K
Q207
R248 56K
R247 56K
Q205, 206 2SC1815 RECORDING AMP
Q207, 208, 210 2SA1015 TAPE BIAS CONTROL
Q209 2SC1318 SWITCHING
D201 MA150
Q209
R283 1K
R282 10
R284 1K
D201
TP210
Q210
Playback operate 0V
Normal 4.6V
CrO2 5.9V
Metal 8.3V
Bias stop
LED LEVEL METER
Play — Rec
S6-11
R317 47K
R319 39K
R335 39K
C311 10V 220
-10 -5 0 +3 +6dB
D318 D319 D320 D321 D322
C309 50V0.1
R321 560
R323 560
R325 560
R327 1K
R329 1K
C307 50V2.2
R331 82K
R333 15K
IC 302
R322 R324 R326 R328 R330
R332
R334
C308
C310
D317 D316 D315 D314 D313
-10 -5 0 +3 +6dB
R336
R320
When light up 0.5V
D313 ~ 314, 321, 322
LN21RP
PEAK LEVEL (+3 ~ +6dB)
D315 ~ 320
LN31GCPHL
PEAK LEVEL (-10 ~ 0dB)
IC302
SVITA7666P
PEAK LEVEL METER LED DRIVE
Play — Rec
S6-12
R318
Play — Rec
S6-2
S6-1
D305
10.3
A1015
CHING
Q303
2SC1685
TPS CONTROL
Q201 ~ 204
2SC1685
PLAY/REC MUTE
IC301
SVIBA338
AUTO STOP (TPS)
TPS CIRCUITRY
C304 25V4.7
C305 25V4.7
R315 180
C306 10V33

2SA1015 2SD788
2SC828 2SC945
2SC1318 2SC1675
2SC1327 2SC1815
2SC1674 2SC1685
2SD592
E C B
2SK34
Source Gate Drain
LN21RP
LN31GCPHL
LN41YCPH
A K
2SK195
Gate Source Drain
SVDLB72UR5H6
A K
2.5mm
2SD886
B C E
VIBA328(8pin)
VIBA338(9pin)
4060

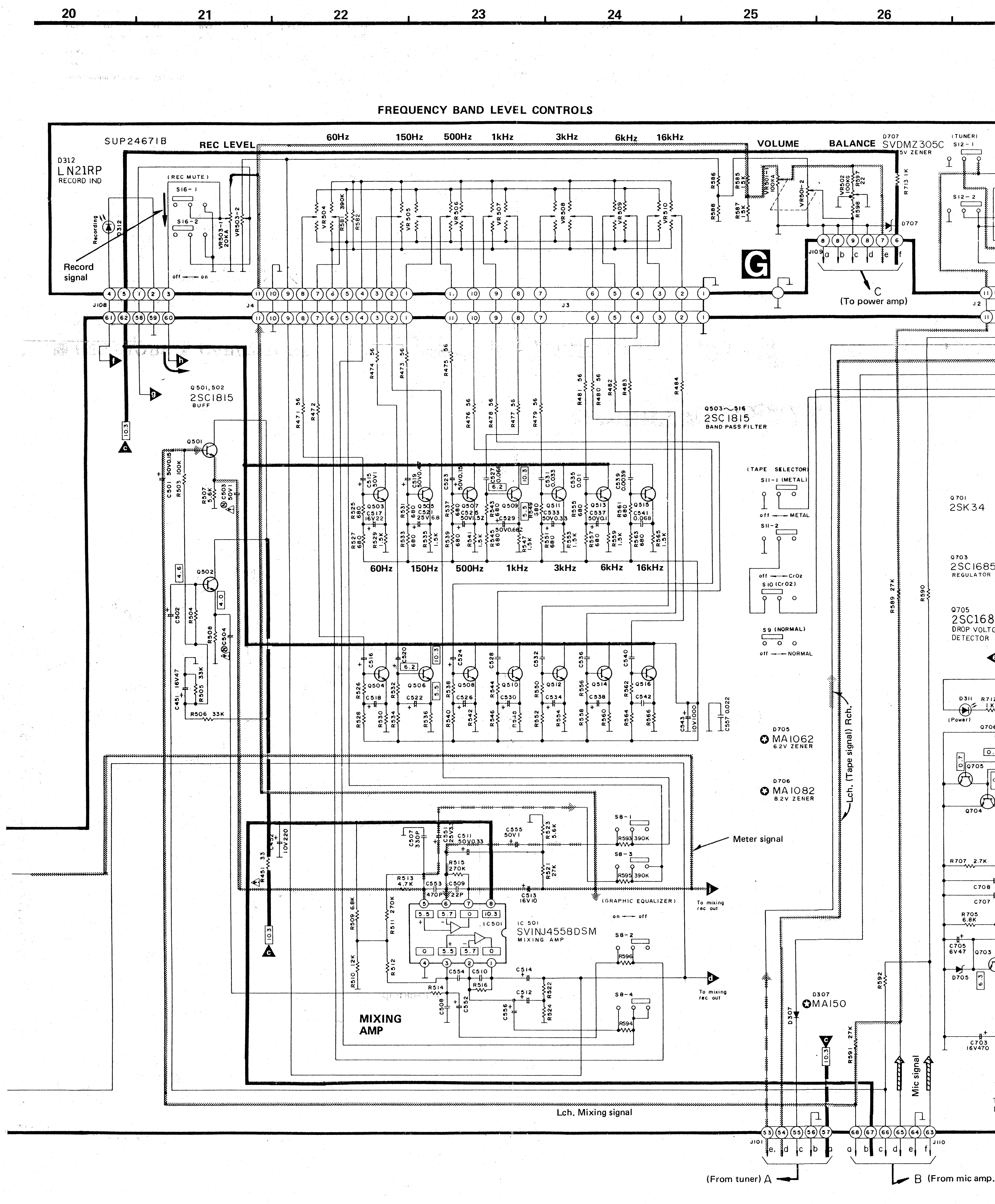
IC202

Pin No.	Record operate Normal	Record operate CrO$_2$	Record operate Metal	Playback operate
4	0V	0V	0V	0V
5	9.1V	0V	8.6V	0V
6	9.1V	8.9V	0V	0V



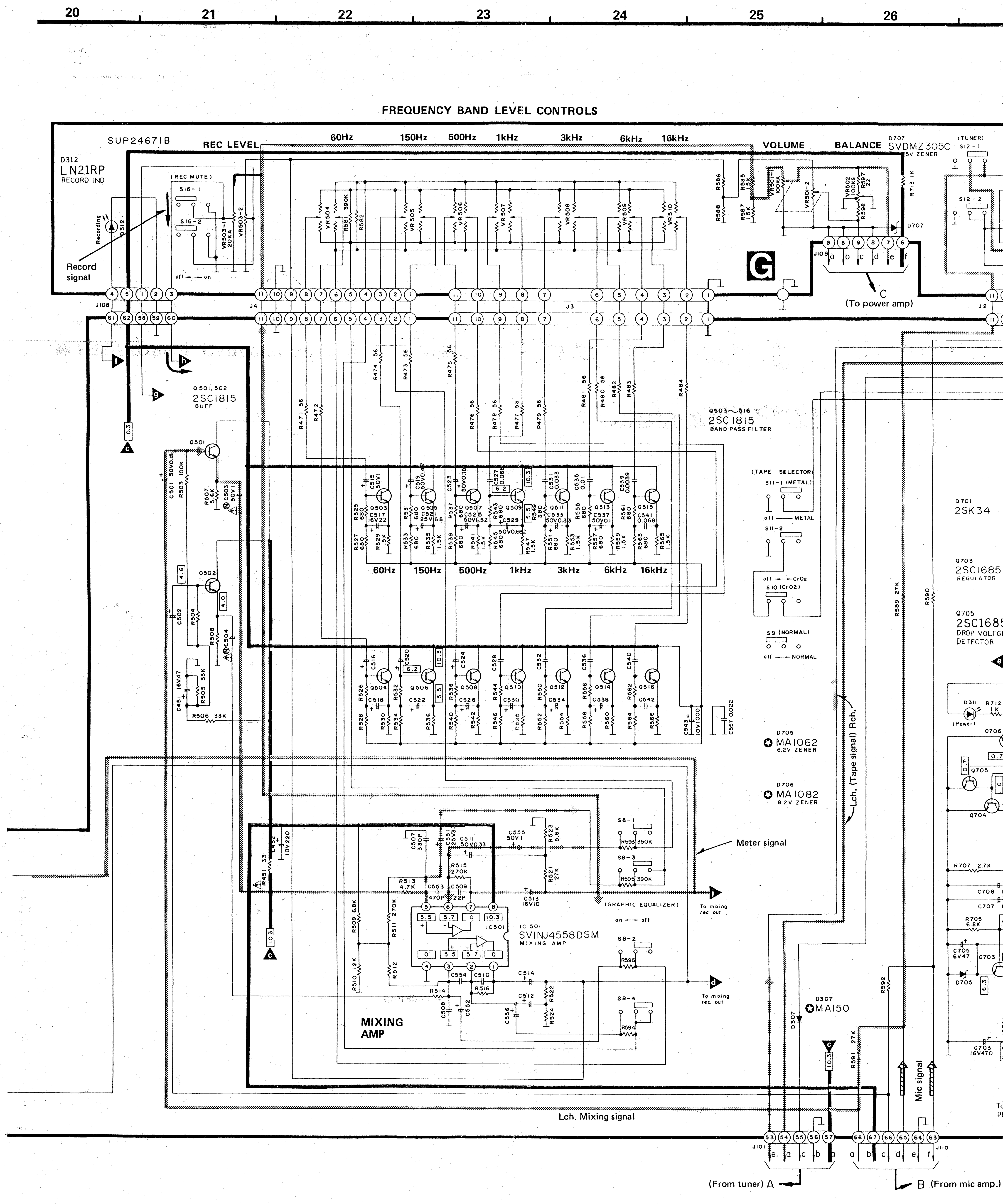
13
14
15
16
17
18
19
D (to connection P.C.B.)
a b c d e f g h i j
Record signal
signal
TAPE SELECTOR
C
SUP24671C
Playback gain
Record bias current adj.
IC202 AN6256 TAPE SELECT
(Bias current) Jumper
Groung
Record bias current adj.
TP204
TP203
TP208
TP210
J105
J106
J107
(LPF) L201
(LPF) L202
Play ← Rec S6-9
Play ← Rec S6-10
out ← in S7-1
DOLBY-NR SWITCH S7-2
Q205, 206 2SC1815 RECORDING AMP
Q207, 208, 210 2SA1015 TAPE BIAS CONTROL
Q209 2SC1318 SWITCHING
D201 MA150
Playback operate 0V
Normal 4.6V CrO2 5.9V Metal 8.3V
Bias stop
LED LEVEL METER
Play ← Rec S6-11
Play ← Rec S6-2
S6-1
Play ← Rec S6-12
D313 ~ 314, 321, 322 LN21RP PEAK LEVEL (+3 ~ +6dB)
D315 ~ 320 LN31GCPHL PEAK LEVEL (-10 ~ 0dB)
IC302 SVITA7666P PEAK LEVEL METER LED DRIVE
-10 -5 0 +3 +6dB
When light up 0.5V
Q303 2SC1685 TPS CONTROL
Q201 ~ 204 2SC1685 PLAY/REC MUTE
2SA1015 SWITCHING
IC301 SVIBA338 AUTO STOP (TPS)
TPS CIRCUITRY
D305

■ SCHEMATIC DIAGRAM -- Ⓑ (Graphic Equalizer, Power Ampifier, Microphone Amplifier & Power Source Circu



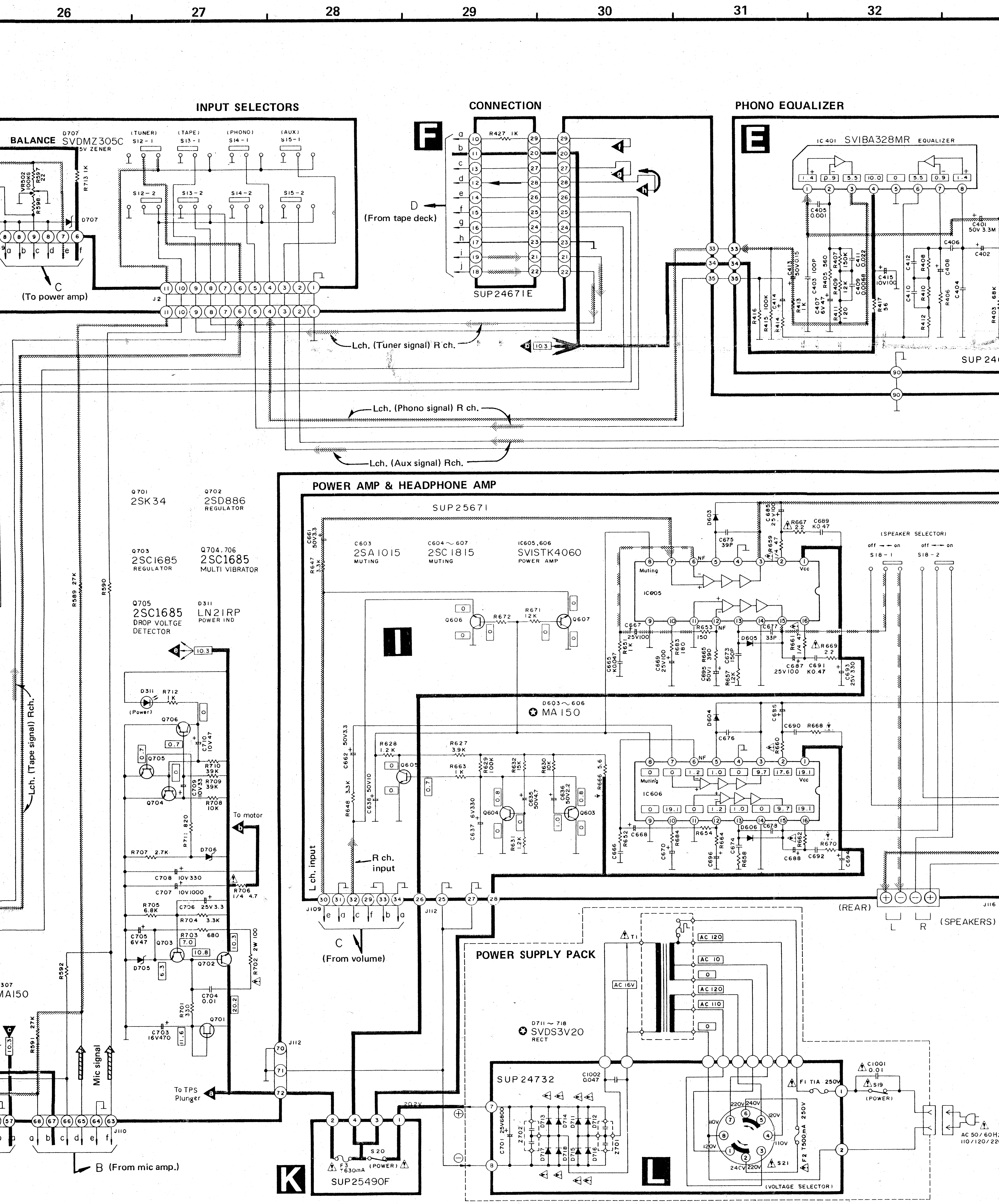
20
21
22
23
24
25
26
FREQUENCY BAND LEVEL CONTROLS
SUP24671B
REC LEVEL
60Hz
150Hz
500Hz
1kHz
3kHz
6kHz
16kHz
VOLUME
BALANCE
D707 SVDMZ305C
5V ZENER
(TUNER) S12-1
S12-2
D312 LN21RP RECORD IND
Recording
Record signal
(REC MUTE)
S16-1
S16-2
off —— on
VR503-1 20KA
VR503-2
VR504
R581 390K
R582
VR505
VR506
VR507
VR508
VR509
VR510
R586
R588
R585 1.5K
R587 1.5K
VR501-1 100KA
VR501-2
VR502 100KG
R597 22
R598
R713 1K
D707
J109
a b c d e f
G
C (To power amp)
J108
J4
J3
J2
Q501,502 2SC1815 BUFF
Q501
Q502
10.3
R474 56
R473 56
R475 56
R471 56
R472
R476 56
R478 56
R477 56
R479 56
R481 56
R480 56
R482
R483
R484
Q503～516 2SC1815 BAND PASS FILTER
C501 50V0.15
R503 100K
R507 5.6K
C503 50V1
C502
R504
R508
C504
4.6
4.0
C451 16V47
R505 33K
R506 33K
C515 50V1
C517 16V22
Q503
R525 680
R527 680
R529 1.5K
C519 50V0.47
C521 25V68
Q505
R531 680
R533 680
R535 1.5K
C523 50V0.15
C525 50V1.5Z
Q507
R537 680
R539 680
R541 1.5K
C527 50V0.068
6.2
C529 50V0.68
Q509
R543 680
R545 680
R547 1.5K
R549 580
5.5
C531 50V0.033
C533 50V0.33
Q511
R551 680
R553 1.5K
C535 0.01
C537 50V0.1
Q513
R555 680
R557 680
R559 1.5K
C539 0.0039
C541 0.068
Q515
R561 680
R563 680
R565 1.5K
60Hz
150Hz
500Hz
1kHz
3kHz
6kHz
16kHz
C516
C518
Q504
R526
R528
R530
C520
6.2
Q506
C522
R532
R534
R536
5.5
C524
C526
Q508
R538
R540
R542
C528
C530
Q510
R544
R546
R548
C532
C534
Q512
R550
R552
R554
C536
C538
Q514
R556
R558
R560
C540
C542
Q516
R562
R564
R566
C543 10V1000
C557 0.022
(TAPE SELECTOR)
S11-1 (METAL)
off —— METAL
S11-2
off —— CrO2
S10 (CrO2)
S9 (NORMAL)
off —— NORMAL
D705 MA1062 6.2V ZENER
D706 MA1082 8.2V ZENER
Lch. (Tape signal) Rch.
Meter signal
R589 27K
R590
Q701 2SK34
Q703 2SC1685 REGULATOR
Q705 2SC168 DROP VOLTG DETECTOR
D311 R712
(Power)
Q706
Q705
Q704
R707 2.7K
C708
C707
R705 6.8K
C705 6V47
Q703
D705
6.3
C703 16V470
R451 33
C452 10V220
C507 330P
C551 25V3.3
C511 50V0.33
R515 270K
C555 50V1
R523 5.6K
R521 27K
R513 4.7K
C553 470P
C509 22P
C513 16V10
R509 6.8K
R511 270K
R512
R510 12K
IC 501 SVINJ4558DSM MIXING AMP
IC501
5.5
5.7
0
10.3
C554
C510
R514
R516
C514
R522
C512
R524
C556
C508
C552
MIXING AMP
S8-1
R593 390K
S8-3
R595 390K
(GRAPHIC EQUALIZER)
on —— off
S8-2
R596
S8-4
R594
To mixing rec out
To mixing rec out
D307 ✪MA150
D307
R591 27K
R592
Mic signal
Lch. Mixing signal
J101
53 54 55 56 57
e d c b a
68 67 66 65 64 63
a b c d e f
J110
(From tuner) A
B (From mic amp.

■ SCHEMATIC DIAGRAM -- Ⓑ (Graphic Equalizer, Power Ampifier, Microphone Amplifier & Power Source Circu



20
21
22
23
24
25
26
FREQUENCY BAND LEVEL CONTROLS
SUP24671B
REC LEVEL
60Hz
150Hz
500Hz
1kHz
3kHz
6kHz
16kHz
VOLUME
BALANCE
D707 SVDMZ305C 5V ZENER
(TUNER) S12-1
S12-2
D312 LN21RP RECORD IND
Recording
Record signal
(REC MUTE)
S16-1
S16-2
off —— on
VR503-1 20KA
VR503-2
VR504
VR505
VR506
VR507
VR508
VR509
VR510
R581 390K
R582
R586
R588
R585 1.5K
R587 1.5K
VR501-1 100KA
VR501-2
VR502 100KG
R597 22
R598
R713 1K
G
J109
C (To power amp)
J108
J4
J3
J2
Q501, 502 2SC1815 BUFF
Q501
Q502
R471 56
R472
R473 56
R474 56
R475 56
R476 56
R477 56
R478 56
R479 56
R480 56
R481 56
R482
R483
R484
Q503〜516 2SC1815 BAND PASS FILTER
C501 50V0.15
R503 100K
R507 5.6K
C503 50V1
C502
R504
R508
C504
R505 33K
R506 33K
C451 16V47
10.3
4.6
4.0
6.2
5.5
(TAPE SELECTOR) S11-1 (METAL)
off —— METAL
S11-2
off —— CrO2
S10 (CrO2)
S9 (NORMAL)
off —— NORMAL
Q701 2SK34
Q703 2SC1685 REGULATOR
Q705 2SC1685 DROP VOLTAGE DETECTOR
R589 27K
R590
D705 MA1062 6.2V ZENER
D706 MA1082 8.2V ZENER
Lch. (Tape signal) Rch.
Meter signal
D311 R712 1K
(Power)
Q706
Q705
Q704
R707 2.7K
C708
C707
R705 6.8K
C705 6V47
Q703
D705
C703 16V470
C543 10V1000
C557 0.022
C452 10V220
R451 33
C507 330P
C551 25V3.3
C511 50V0.33
R515 270K
R513 4.7K
C553 470P
C509 22P
C555 50V1
R523 5.6K
R521 27K
C513 16V10
S8-1
R593 390K
S8-3
R595 390K
(GRAPHIC EQUALIZER)
on —— off
S8-2
R596
S8-4
R594
To mixing rec out
IC501 SVINJ4558DSM MIXING AMP
R509 6.8K
R511 270K
R510 12K
R512
R514
C554
C510
R516
C514
C512
R522
R524
C556
C508
C552
MIXING AMP
D307 MA150
R592
R591 27K
Mic signal
Lch. Mixing signal
J101
J110
(From tuner) A
B (From mic amp.)

& Power Source Circuitry)


26
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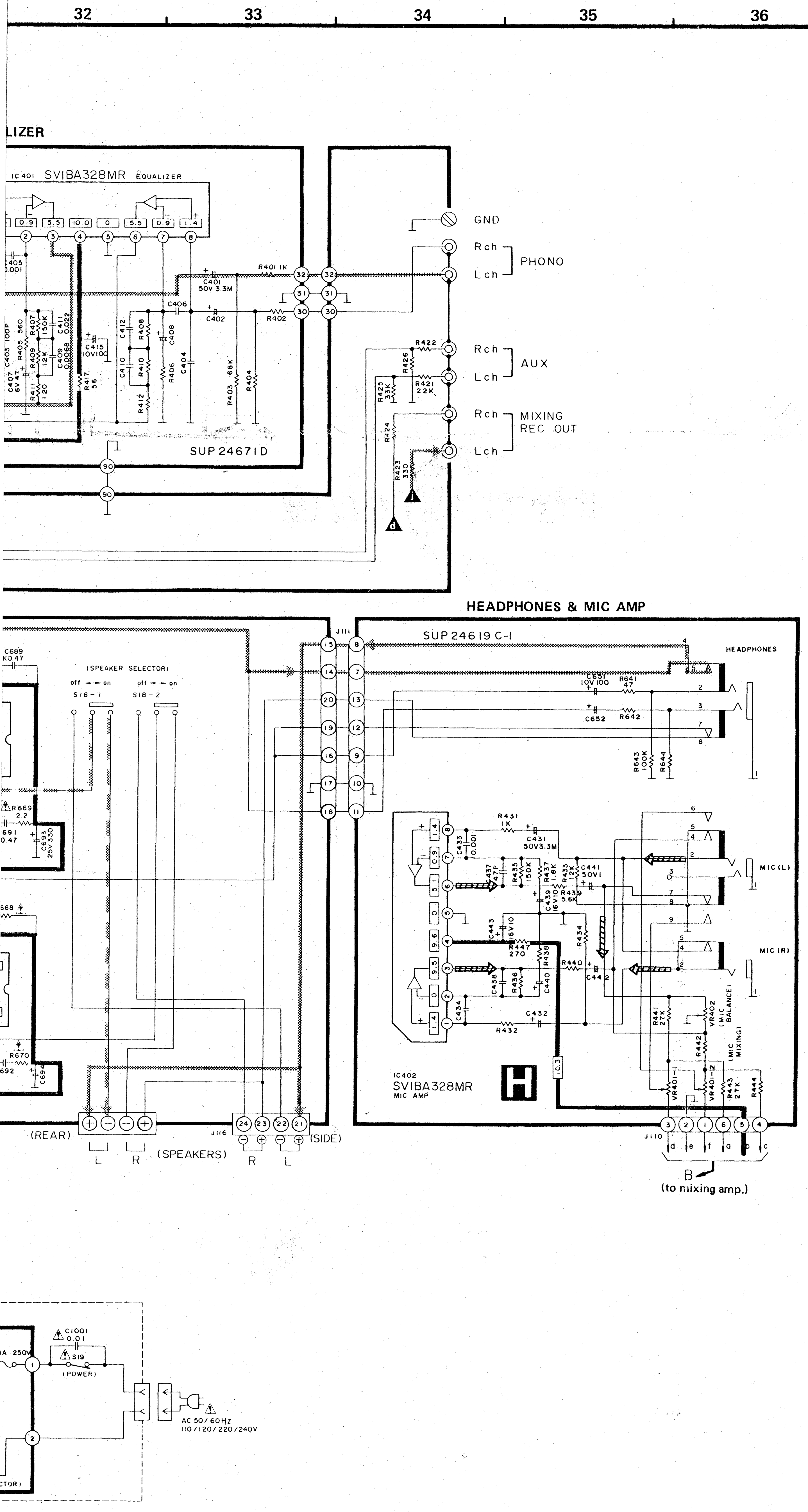
INPUT SELECTORS
BALANCE
D707 SVDMZ305C 5V ZENER
(TUNER) S12-1
(TAPE) S13-1
(PHONO) S14-1
(AUX) S15-1
S12-2
S13-2
S14-2
S15-2
R713 1K
VR502 100KG
R597 22
R598
D707
C (To power amp)
J2
CONNECTION
F
R427 1K
D (From tape deck)
SUP24671E
Lch. (Tuner signal) R ch.
Lch. (Phono signal) R ch.
Lch. (Aux signal) Rch.
10.3
PHONO EQUALIZER
E
IC401 SVIBA328MR EQUALIZER
C405 0.001
C413 50V0.15
C403 100P
R407 30K
R405 560
C411 0.022
C409 0.0068
R409 12K
R411 120
C407 6V47
R413 1K
C414
R416
R415 100K
R414
C415 10V100
R417 56
C412
R408
C410
R410
R412
C408
R406
C404
C406
C401 50V 3.3M
C402
R403 68K
SUP24
POWER AMP & HEADPHONE AMP
SUP25671
Q701 2SK34
Q702 2SD886 REGULATOR
Q703 2SC1685 REGULATOR
Q704,706 2SC1685 MULTI VIBRATOR
Q705 2SC1685 DROP VOLTGE DETECTOR
D311 LN21RP POWER IND
C603 2SA1015 MUTING
C604~607 2SC1815 MUTING
IC605,606 SVISTK4060 POWER AMP
I
Q606
R672
R671 12K
Q607
C661 50V3.3
R647 3.3K
D603
C685 25V10
C675 39P
R659 47
R667 22
C689 K0.47
Muting
NF
Vcc
IC605
C667 25V100
R651 1K
C665 K0.047
C669 25V100
R683 180
R653 150
C695 50V1
R665 390
C673 150P
R657 12K
D605
C677 33P
R661 1/4 47
R669 22
C687 25V100
C691 K0.47
C693 25V330
D603~606 MA150
D604
C686
C690
R668
C676
R660
IC606
C662 50V3.3
R628 12K
Q605
R627 3.9K
R663 1K
R629 100K
R632 15K
R630 10K
C635 50V4.7
C636 50V2.2
R666 5.6
R648 3.3K
C638 50V10
C637 6V330
Q604
Q603
R631 12K
C668
R652
C666
C670
R684
R654
C696
R664
C674
R658
D606
C678
R662
R670
C688
C692
C694
L ch. input
R ch. input
J109
J112
C (From volume)
(SPEAKER SELECTOR)
off — on
S18-1
S18-2
(REAR)
J116
L
R
(SPEAKERS)
D311
R712 1K
(Power)
Q706
C710 10V47
Q705
R710 39K
R709 39K
C709 10V33
Q704
R708 10K
To motor
R711 820
R707 2.7K
D706
C708 10V330
C707 10V1000
R706 1/4 4.7
R705 6.8K
C706 25V3.3
R704 3.3K
C705 6V47
Q703
R703 680
R702 2W 100
D705
Q702
C704 0.01
R701 330
Q701
C703 16V470
To TPS Plunger
R589 27K
R590
R592
R591 27K
307
MA150
Mic signal
J110
B (From mic amp.)
J112
K
F3 630mA
S20 (POWER)
SUP25490F
20.2V
POWER SUPPLY PACK
T1
AC 120
AC 10
AC 16V
AC 120
AC 110
D711~718 SVDS3V20 RECT
SUP24732
C1002 0.047
C701 25V6800
Z702
D713
D714
D711
D712
Z701
D717
D718
D715
D716
L
C1001 0.01
F1 T1A 250V
S19 (POWER)
220V
240V
110V
120V
250V
F2 T500mA
S21
24CV
(VOLTAGE SELECTOR)
AC 50/60H
110/120/22


32
33
34
35
36
37
38
LIZER
IC401 SVIBA328MR EQUALIZER
SUP24671D
GND
Rch
Lch
PHONO
AUX
MIXING REC OUT
R401 1K
C401 50V3.3M
R422
R426
R421 22K
R425 33K
R424
R423 330
HEADPHONES & MIC AMP
SUP24619C-1
J111
HEADPHONES
C651 10V100
R641 47
C652
R642
R643 100K
R644
(SPEAKER SELECTOR)
off — on
S18-1
S18-2
R669 2.2
R670
MIC(L)
MIC(R)
R431 1K
C431 50V3.3M
C441 50V1
R439 5.6K
R440
C442
R432
C432
IC402 SVIBA328MR MIC AMP
H
VR402 (MIC BALANCE)
VR401-1
VR401-2 (MIC MIXING)
R441 27K
R443 27K
R444
R442
(REAR)
L
R
(SPEAKERS)
J116
(SIDE)
J110
B
(to mixing amp.)
C1001 0.01
S19 (POWER)
AC 50/60Hz 110/120/220/240V

Notes

1. **S1:** FM muting/FM mode switch in "**on/auto**" position. (on/auto ←→ off/mono)
2. **S2 ~ S4:** Band selector switch in "**FM**" position. S2 (FM ←→ AM) S3 (MW) S4 (LW)
3. **S5:** LW antenna selector "**INT**" position. (INT ←→ EXT)
4. **S6-1 ~ S6-12:** Record/Playback selector switch in "**Playback**" position.
5. **S7-1, 7-2:** Dolby NR switch in "**out**" position. (in ←→ out)
6. **S8-1 ~ S8-4:** Graphic equalizer switch in "**off**" position.
7. **S9 ~ S11:** Tape selector switch in "**Metal**" position. S9 (Normal) S10 (CrO_2) S11 (Metal)
8. **S12 ~ S15:** Input selector switch in "**Tuner**" position. S12 (Tuner) S13 (Tape) S14 (Phono) S15 (Aux)
9. **S16-1, 16-2:** Record mute switch in "**off**" position.
10. **S17:** AM beat proof switch in "**A**" position. (A ←→ B)
11. **S18-1, 18-2:** Speaker selector switch in "**on (rear speaker)**" position.
12. **S19:** Power source (1st AC) switch in "**on**" position.
13. **S20:** Power source (2nd DC) switch in "**on**" position.
14. **S21:** Voltage selector switch in "**240V**" position. (120V ←→ 110V ←→ 220V ←→ 240V)
15. Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
    - * Figures in ☐ stand for DC voltage in tuner selection (FM mono signal reception) mode and AF circuit no-signal mode.
    - * Figures in < > stand for DC voltage in AM signal reception mode.
    - * Figures in [ ] stand for DC voltage in TPS circuitry operation.
    - * Figures in ⟪ ⟫ stand for DC voltage in FM stereo signal reception mode.
16. ▬ Positive voltage (+B) lines.
17. Signal lines
    - ⇨ AF ➡ AM ⇨ FM
    - ⇨ Microphone → Record
18. Important safety notice:
    Components identified by ⚠ mark have special characteristics important for safety.
    When replacing any of these components, use only manufacturer's specified parts.
19. The part No. of transistors, IC and diodes mentioned in the schematic diagram stand for production part No. Regarding the part No. with ✪ mark, the production part No. are different from the replacement part No. Therefore, when placing an order for replacement parts, please use the part No. in the replacement parts list.